GOOD PRACTICE GUIDELINES

Keeping healthy and safe while working on the road or roadside

GUIDANCE FOR PCBUs

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Te Kāwanatanga o Aotearoa
New Zealand Government

WORKSAFE
Mahi Haumaru Aotearoa

These guidelines provide advice for PCBUs on how to keep workers healthy and safe while working on the road or roadside.

ACKNOWLEDGEMENTS

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Cover image courtesy of Danny Wood.

Keeping healthy and safe while working on the road or roadside

KEY POINTS

- Road and roadside workers can be exposed to many risks to their health and safety.
- All businesses involved with road and roadside work have a duty to make sure workers and others are not put at risk as a result of their activities.
- Businesses must work together to manage the risks related to road and roadside work regardless of where the business or worker is in the contracting chain.
- Businesses must consult with their workers when deciding how to manage the risks related to their work.

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Use of ‘must’, ‘should’, and ‘could’

The words ‘must’, ‘should’, and ‘could’ indicate whether an action is required by law or is a recommended practice or approach.

TERM	DEFINITION
Must	Legal requirement that has to be complied with
Should/could	Recommended practice or approach

Key terms

The glossary at the back of these guidelines has a list of the technical words, terms, and abbreviations used in these guidelines and explains what they mean.

Lists

Lists of examples are not intended as complete lists. They may list some but not all possible examples.

Images

Images are a guide only. They are not intended to provide technical specifications.

PART A

Introduction

IN THIS PART:

1.0
About these guidelines

IN THIS SECTION:

Road and roadside work can expose workers to many health and safety risks. These guidelines will provide advice on how to manage these risks.

1.1 What are these guidelines about?

These guidelines provide advice on how to manage the health and safety risks road and roadside workers are exposed to while at work. They can help persons conducting a business or undertaking (PCBUs) to meet their duties under the Health and Safety at Work Act 2015 (HSWA).

The guidelines are grouped into five parts:

Part A has a general introduction to applying a risk management approach in the road and roadside work environment, and guidance on how to provide for road and roadside worker health and safety throughout the contracting chain.

Part B offers good practice advice for managing common health risks for road and roadside workers.

Part C offers good practice advice for managing common safety risks for road and roadside workers.

Part D offers good practice advice regarding worker facilities, training and certifications, personal protective equipment (PPE), and worker inductions.

Appendices 1–6 include a glossary of terms and more detailed explanations of key health and safety duties under HSWA.

1.2 Who should read these guidelines?

These guidelines are for any PCBU who is involved in road or roadside work at any point in the contracting chain, for example:

- a PCBU that has workers working on a road or roadside
- a PCBU that has control of a road or roadside and contracts work to be done on that road or roadside
- a PCBU that subcontracts other PCBUs to do work on a road or roadside
- a PCBU that is responsible for designing or implementing temporary traffic management plans for road or roadside work.

These guidelines are written to accommodate the wide range of knowledge and experience of PCBUs that may refer to it. In some instances, PCBUs may need to refer to relevant experts for further guidance on how to implement or execute recommended practices.

These guidelines may also be useful for health and safety professionals when providing health and safety advice to PCBUs who are involved with road or roadside work, or those who are part of the contracting chain.

1.3 What work is covered by these guidelines?

These guidelines cover all work being done on a road or roadside. Examples of road and roadside work include:

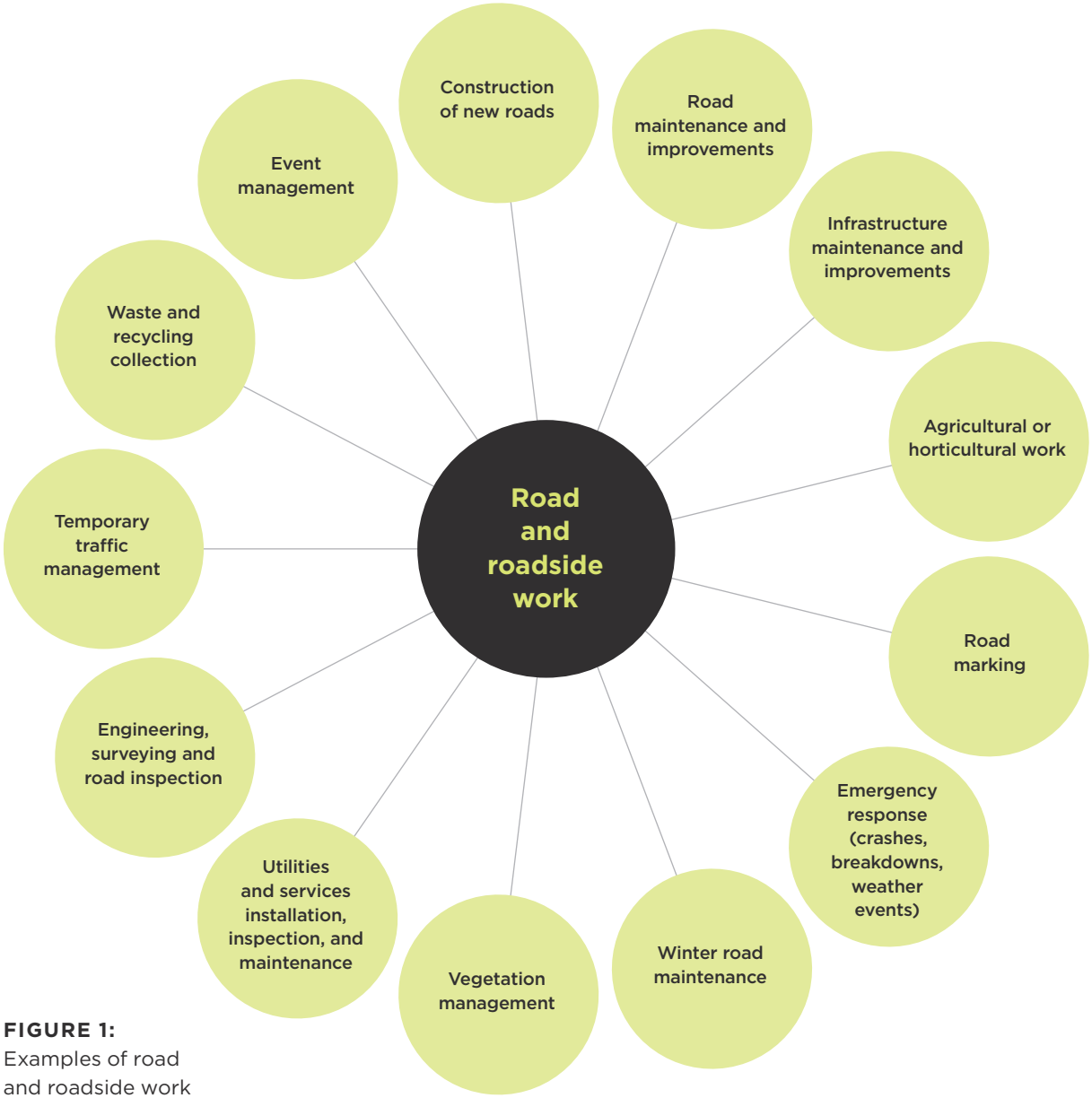

FIGURE 1:
Examples of road and roadside work

In these guidelines the terms road and roadside are used to mean the following:

TERM	MEANING IN THESE GUIDELINES
Road	The area of land between the legal boundaries, usually fence line to fence line (including any safety run-off areas), which is dedicated to allowing the passage of road users. Sometimes also known as the road reserve.
Roadside	The area near a road that may be affected by activity on the road, or where activity in that area may affect the road. For example, where: – a nearby road, or road users on that road, present a risk to workers – workers or the work activity present a risk to road users on a nearby road.

These guidelines apply to public and private roads.

1.4 What workers are covered by these guidelines?

These guidelines cover all workers who work on a road or roadside.
Examples include:

- the employees of road controlling authorities (RCAs)
- the employees of PCBUs at all stages of the contracting chain:
  - contractors and their workers
  - subcontractors and their workers
- labour hire and temporary workers
- suppliers of professional services.

Volunteers

In some circumstances, work done on or near roads may be undertaken by volunteers or managed by a voluntary organisation or association.

When this is the case, PCBU duties under HSWA may still apply.

For more information, see WorkSafe's webpage: Volunteers

1.5 Notifying WorkSafe

PCBUs must notify WorkSafe if any of the following events occur because of work that their business is responsible for:

- a death
- a notifiable illness or injury (a specified serious work-related illness or injury)
- a notifiable incident (for example, an electric shock).

To notify WorkSafe:

- If a death of a person occurred at a workplace, call 0800 030 040 immediately.
- For all other notifications, use: The WorkSafe tool

For more information, see WorkSafe's guidance: What events need to be notified?

2.0
Risk management

IN THIS SECTION:

Using a risk management approach can help you to identify and manage risks related to road and roadside work.

2.1 Introduction to risk management

This section offers guidance for PCBUs on ways you can apply good risk management principles in the road and roadside work environment.

Risks to health and safety arise from people being exposed to a hazard (a source or cause of harm).

As a PCBU, you must manage your work risks so that workers and other peoples' health and safety is not put at risk by the work that you do.

Risk management is about:

- identifying hazards and assessing risks
- applying control measures to eliminate or minimise those risks
- regularly reviewing control measures.

You must consult with your workers and their representatives at all steps of the risk management process. For more information, see Appendix 6: Worker engagement, participation and representation

If you are planning work that will likely be undertaken by contractors and subcontractors, where reasonably practicable, you should consult with those contractors and subcontractors who are going to be doing the work when planning out how to manage risks. For more specific details, see Section 3.0: Managing risk throughout the contracting chain

2.2 Identify hazards

With your workers, identify hazards that could be associated with the work activity.

A hazard is a potential source or cause of harm (such as a physical injury, or harm to a person's health or their mental wellbeing) and can include a person's behaviour.

Every work environment or work activity will be different. Looking at your work environment and thinking about things that could go wrong may help you to identify hazards. Reviewing your incident and injury records (including near misses) may also help identify hazards.

Table 1 below lists some common hazards for road and roadside workers. You can use these as a starting point for identifying hazards related to your road or roadside work.

Remember: When identifying hazards, you need to think across the entire duration of the project, from initiation and set up, to execution, conclusion, and future maintenance.

HAZARD AREA	EXAMPLES
Physical landscape features	– steep slopes or drop-offs – uneven terrain – bodies of water
Extreme weather conditions (consider seasonal and daily variations)	– excess surface water – ice in winter – strong winds – fog – hot or cold temperature extremes – UV (ultraviolet) exposure
Mobile plant, power tools, and other machinery and worksite vehicles	– machinery operating near people or other machinery – plant that produces excessive fumes, vibration, or noise
Vehicles	– working near live traffic lanes – changing road conditions – road users: - distracted road users - aggressive or angry road users - driving too fast for the conditions
Worksite layout	– poor visibility – poor lighting – limited working space
Biological hazards	– bacteria, viruses, or faecal matter – contaminated water (flood waters or stagnant water) – biological matter spills – road kill
Hazardous substances	– hazardous substances being used (such as emulsion) – hazardous substances being stored at site or transported to or from site – chemical spills
Presence of live underground or overhead services and utilities	– working near overhead lines – digging near underground cables or pipes – damaged utilities resulting from a crash or weather event
Harmful airborne substances	– vehicle and plant emissions (such as diesel particulate matter) – silica particulate from concrete cutting – dust and other contaminants disturbed during digging or excavation
Exposure to traumatic situations	– vehicle-related crashes – worksite incidents – confrontation with members of the public or other workers or contractors
Working at height	– on ladders or other height access equipment – on bridges – on vehicles – near edges of trenches

HAZARD AREA	EXAMPLES
Confined spaces	– working in trenches – working underground – working in tunnels – low oxygen atmospheres and hydrogen sulphide
Hours of work/shift work	– long commute times to worksites – night work – excessive over-time
Manual tasks/vibration	– lifting or handling heavy objects – operating machinery that creates vibration – repetitive tasks
Remote work	– limited access to facilities – lone workers – emergency assistance (especially in hard-to-reach locations)
Pedestrians, cyclists, and other people near the worksite	– unexpected movements of the public – interference with unattended worksites – public entering worksites without authorisation
Personal factors	– impairment of workers due to drugs, medication, alcohol, stress, or fatigue – worker distractions (such as cell-phones, work pressures, home pressures)
Interpersonal relationships	– bullying, harassment, violence – poor communication between workers, managers, and other contractors

TABLE 1: Examples of common hazards

2.3 Assess the risk

You will need to carry out a risk assessment for each hazard you have identified. You should involve your workers in this process.

Below are some of the things you should consider when carrying out a risk assessment.

Who might be exposed to the hazard?

- Think about who could be involved in, or near, the work activity. For example:
  - workers
  - contractors
  - site visitors
  - motorised road users
  - pedestrians, cyclists, and other vulnerable road users.
- Do you have any workers that could be considered vulnerable? For example:
  - new, young, or inexperienced workers
  - migrant workers
  - workers with low literacy levels (they may not be able to understand written safety information).

How often is the hazard likely to cause a risk?

- Is the hazard present all the time, some of the time, or very rarely?
- What factors could influence when the hazard will occur or be present?
  - Are there certain times of the year that are busier than others?
  - Are there likely to be seasonal variations to the level of risk?
  - Are there certain activities that have increased exposure to the hazard?

How could workers or others be physically harmed? This could include:

- being hit by a vehicle
- being hit by mobile plant
- being physically assaulted by public road users or other workers
- falling from a vehicle or some other height
- being hit by falling objects
- being injured by sharp objects or pinch points on work equipment or machinery
- being hit by items falling off a vehicle (unsecured or unstable loads)
- being injured as a result of improper use of a vehicle or mobile plant
- being injured when carrying out manual tasks
- slipping, tripping, or falling from slippery, uneven, steep, or unstable surfaces.

How could workers' health or mental wellbeing be harmed? For example, this could happen:

- through exposure to hazardous levels of fumes or excessive noise or biological or chemical matter
- through excessive use of vibrating plant
- through a lack of access to facilities such as toilets or sanitation, and shelter and healthy food options
- through fatigue or stress from working long hours or shift work disrupting sleep patterns
- from verbal abuse by public road users, other staff, management, or contractors
- from dealing with the results of road crashes or traumatic situations (including having to work at or near sites of previous fatalities).

How severe could the harm be?

- Could the hazard result in serious harm or a fatality?

How likely are these consequences?

- How likely is it that someone could be harmed by the hazard?

How does or could the hazard interact with other hazards or risk?

- Does the risk presented by the hazard increase or change in the presence of other hazards? For example, working near a sharp bend in the road could be made even more dangerous if fog further reduces driver visibility.

Decide which risks to deal with first. Risks with potentially significant, life changing consequences such as serious injury or death, or chronic ill-health should be prioritised.

2.4 Manage the risk

You must take all reasonably practicable actions to eliminate risks to health and safety. Many of the examples listed above can be eliminated through well considered design and planning.

If elimination is not reasonably practicable, you must minimise those risks so far as is reasonably practicable.

The ways of managing risks are ranked from the highest level of protection and reliability to the lowest. This ranking is known as the hierarchy of control measures.

Using the hierarchy of control measures to manage risks will help you make sure you are using the most effective control measures first (see Figure 2).

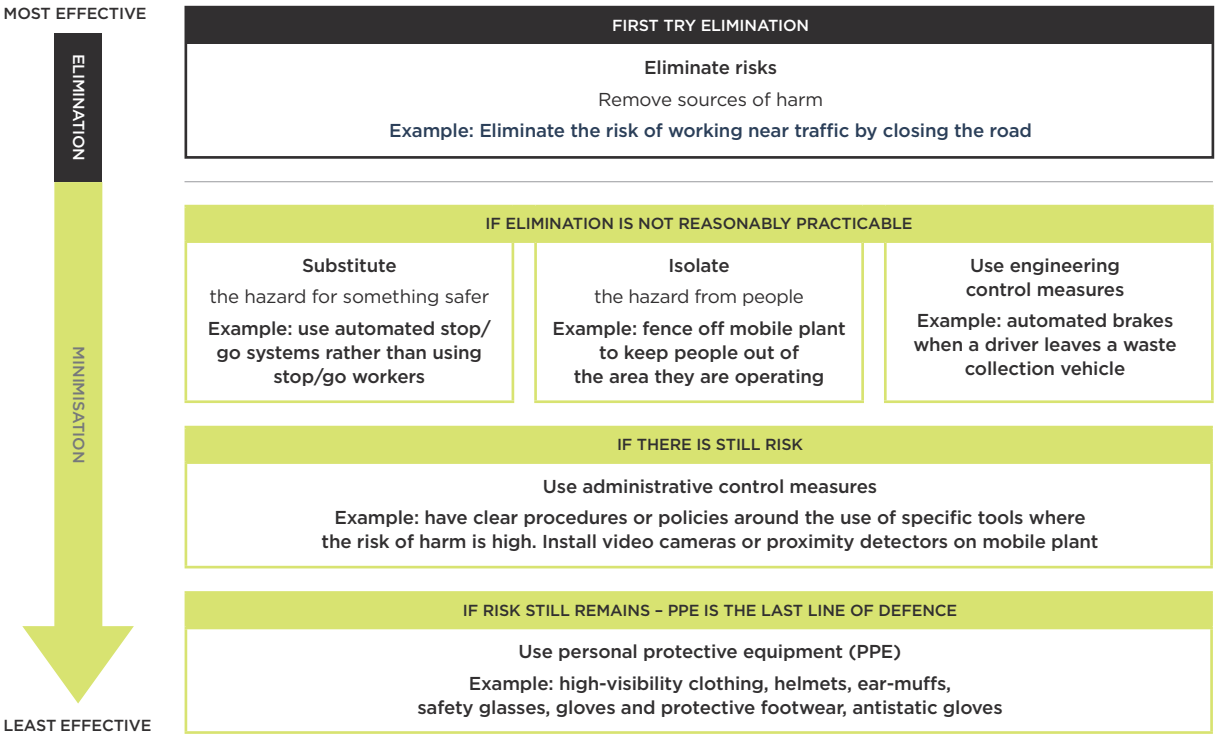

FIGURE 2: Hierarchy of control measures

Common risk areas for road and roadside workers and recommended control measures are covered in more detail in Part B and Part C of these guidelines.

You should use a combination of control measures. Using multiple control measures means that if a single control measure fails, workers will not be left without any protection.

Reasonably practicable

Eliminating the risk should be the preferred approach when deciding what control measure is the most appropriate.

However, elimination may not always be reasonably practicable, and you may need to consider lower-level control measures.

When considering whether you can use a particular control measure to ensure health and safety, you can take into account and weigh up relevant matters including:

- the likelihood of the risk concerned occurring or workers being exposed to the hazard
- the degree of harm that might result
- what the person concerned knows, or ought reasonably to know, about:
  - the hazard or risk
  - ways of eliminating or minimising the risk
- the availability and suitability of ways to eliminate or minimise the risk
- after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

For more information, see WorkSafe's fact sheet: Reasonably practicable

If in doubt – seek expert advice

You may choose to seek advice from a suitably qualified health and safety professional when seeking to understand the risks your workers face and how best to manage those risks.

If you do seek expert advice, this advice should be considered alongside the outcomes of consulting with your workers, and contractors or subcontractors (if applicable).

2.5 Review control measures

Control measures need to be regularly reviewed in consultation with your workers or their representatives, to make sure they remain effective. For more information, see Appendix 6: Worker engagement, participation and represention

In a contracting chain, the PCBU at the top of the contracting chain (the contracting PCBU) must make sure planned control measures are being applied, and that the control measures are effectively managing the risk to all workers down the contracting chain. For more specific details, see Section 3.0: Managing risk throughout the contracting chain

If your worksite or work activities change, you need to check that your existing control measures are still the most appropriate ones to use.

2.6 Managing risk across a system

In the road and roadside work environment, think about how you will manage risk across the whole system – that is:

- across a project, from design to completion and future maintenance
- across all work activities, workers, and others affected by the work (road users and the general public).

Rather than managing each risk in isolation, think about how control measures for each risk could impact on other parts of the system or the workflow, to avoid risks being transferred or created elsewhere.

You may need to weigh up the benefits of a particular control measure against any potential risks it creates elsewhere and look at a solution that provides the least total risk to all affected parties.

2.7 Managing risk in dynamic environments

For emergency work in particular, it may not be possible to anticipate all risks that may arise.

The level of risk associated with a particular activity may vary based on:

- the geographic location
- weather conditions
- the time of year
- whether it is day or night
- the day of week or time of day
- traffic volumes (for example, peak commuting traffic or holiday season traffic)
- road user behaviour
- how close the work is to a live lane of traffic.

Train workers to recognise unanticipated risks and know what control measures to use. Workers need to be able recognise when a situation has become unsafe. They also need to have the authority to stop work if they decide they are unable to properly manage the risks they have identified.

2.8 More information on general risk management

WorkSafe's guidance Identifying, assessing and managing work risks

3.0 Managing risk throughout the contracting chain

IN THIS SECTION:

Good planning, resourcing, communication, and leadership are essential to effectively manage risk throughout a road and roadside work contracting chain.

3.1 Introduction to managing risk throughout the contracting chain

This section offers guidance for PCBUs on ways to manage shared health and safety duties while working in a contracting chain in the road and roadside work environment.

Contracting is when a PCBU (called the **contracting PCBU**), hires another PCBU (called a **contractor**) to carry out work for them.

A **contractor** may also hire a PCBU (called a **subcontractor**). This is known as a **contracting chain** and is the most common business model used in road and roadside work.

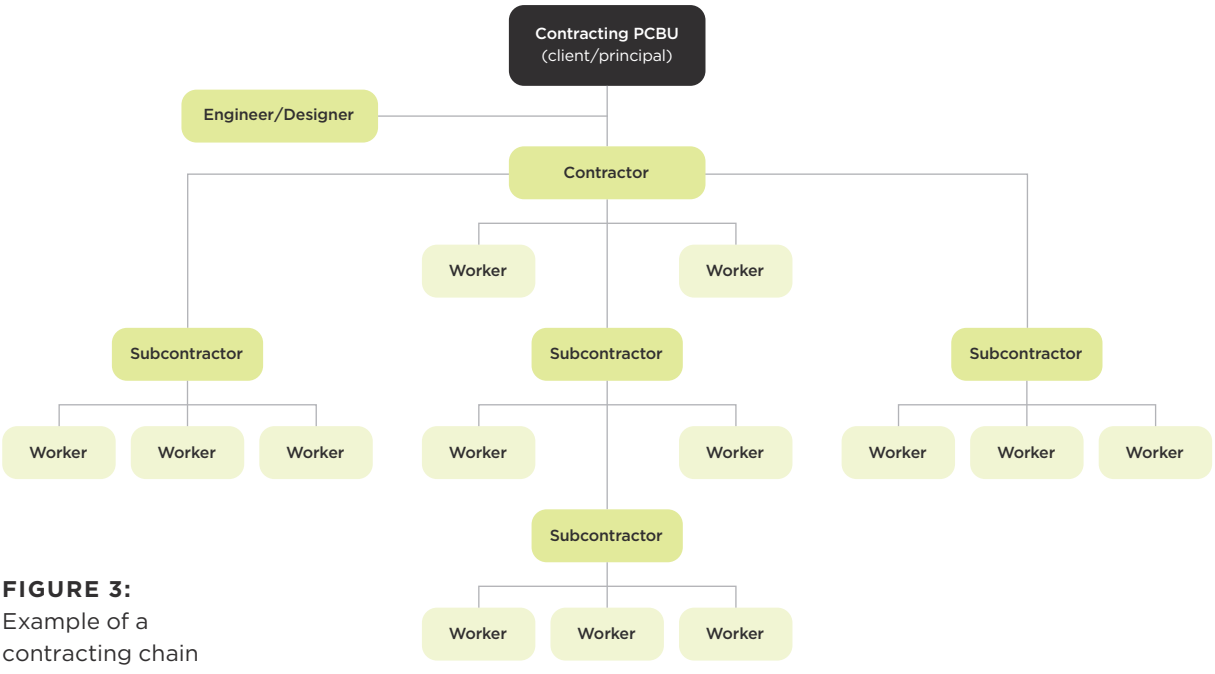

FIGURE 3:
Example of a contracting chain

Contract types may include:

- project contracts (such as construction, installation, or upgrade work)
- maintenance and repair activity contracts (including towing)
- service and monitoring contracts (such as waste and recycling collection).

Contractors and subcontractors may be individuals or businesses. Contractors and subcontractors (and their employees) who are carrying out work for the contracting PCBU are considered to be workers of the contracting PCBU under HSWA.

3.2 Overlapping duties in the contracting chain

PCBUs operating in a contracting chain will have shared health and safety duties with other PCBUs in that contracting chain (known as overlapping duties).

All PCBUs, so far as is reasonably practicable, must consult, cooperate, and coordinate together to manage their overlapping duties.

There are four main points to remember about overlapping duties:

- PCBUs have a duty to **consult**, **cooperate** with, and **coordinate** activities with all other PCBUs they share overlapping duties with, so far as is reasonably practicable.
- PCBUs cannot contract out of their health and safety duties or push risk onto others in a contracting chain.
- PCBUs can enter into reasonable agreements with other PCBUs to make sure that everyone's health and safety duties are met. But PCBUs must monitor each other, to make sure each PCBU continues to do what was agreed.
- The more influence and control a PCBU has over a work site or a health and safety matter, the more responsibility they are likely to have.

The size of the PCBU, or its financial resources, does not automatically equate to its ability to influence and control health and safety matters. PCBUs need to consult, cooperate, and coordinate with all other PCBUs (regardless of their size) to make sure everyone can meet their health and safety duties.

For more general information on managing overlapping duties, see Appendix 2: Health and Safety at Work Act 2015 duties

3.3 Expectations for contracting PCBUs

The contracting PCBU is usually the initiator of a contract for work or services. Contracting PCBUs are sometimes referred to as the client or principal. Tenders may be put out and a procurement process is usually followed.

In road and roadside work the most common contracting PCBUs will be:

- road controlling authorities (RCAs) such as Waka Kotahi for state highways or local government authorities for local roads
- utility or service providers (such as internet or electricity companies)
- the owners of private roads
- a local government authority (when contracting services such as rubbish and recycling collection or water and sewer repairs under the road).

Other examples could include event organisers and land or property developers.

Contracting PCBUs must make sure, so far as is reasonably practicable, that the health and safety of their workers and other people are not put at risk by the work that they do.

WorkSafe expects PCBUs at the top of a contracting chain to be leaders in encouraging and supporting good health and safety practices throughout the contracting chain.

In addition to the four main points outlined in Section 3.2, as explained below, PCBUs at the top of the contracting chain should:

- eliminate risk at the design and planning stage (where reasonably practicable)
- use procurement practices that support positive health and safety outcomes
- monitor and review health and safety aspects of contracts
- engage with workers and the community.

Eliminate risk at the design and planning stage

Work with designers and engineers to eliminate risks, so far as is reasonably practicable, at the design and planning stage. Consider potential health and safety risks to workers at all steps of a project – from design and construction, to execution, completion, and future maintenance. For example:

- planning and allowing for the safest and healthiest work methods to be used
- considering the phasing or timing or the work. Plan around seasonal factors and other work or activities that may be happening at the same time or space
- considering what new technology that improves health and safety outcomes for workers may be available.

Where reasonably practicable, consult with potential contractors and subcontractors to identify risks that could be eliminated at the design and planning stages as well.

For more information, see Appendix 5: Upstream duties and WorkSafe guidance: Health and Safety by Design: An introduction

Use procurement practices that support positive health and safety outcomes

When selecting contractors, consider their health and safety records. For example, you can look for:

- evidence of proactive steps to improve health and safety
- evidence of ongoing improvement in health and safety outcomes
- evidence of effective worker engagement.

Using a centralised prequalification system may make it easier for potential contractors to prequalify.

Adopt procurement practices that prioritise worker health and safety and avoid negative outcomes. For example:

- adopting collaborative policies that promote good health and safety practices. Avoid compliance-driven reporting, which can lead to under reporting or misreporting of incidents to avoid financial penalties
- considering incentivising the reporting of real meaningful data. Look for evidence of how contractors have mitigated future risk and engaged workers in the process, and how they have worked with affected workers to return to work
- checking that contractors have processes to provide their workers with appropriate training and competency checks. Where reasonably practicable, identify any specific training requirements at the planning stages of a project. For more information see, Section 28.2: Check workers have required certifications, licences, and training
- allowing enough time for delivery planning by contractors.

Allow flexibility in contracts to adapt to changing circumstances during the life of the contract. For example:

- enabling the adoption of new technology as it becomes available
- allowing for improved, safer ways of working as they become known
- being able to reassess and/or reallocate resources (including financial resources) over time, as needed, to maintain the same level of health and safety standards for all workers throughout the contracting chain.

Monitor and review health and safety aspects of contracts

You should put clear and effective monitoring and reporting procedures in place so you can be confident all health and safety duties are being met through the entire contracting chain. For example:

- making sure there are effective communication pathways between the PCBUs in the contracting chain
- making sure (where relevant) that exposure and health monitoring is taking place throughout the contracting chain and that action is taken when unsafe conditions or health risks are identified. For more information, see Section 16.0: Exposure monitoring and Section 17.0: Health monitoring

Do post-contract reviews (or annual reviews for longer-term contracts) to see what worked well and what needs to be improved regarding worker health and safety. This should include communication and reporting pathways from subcontractors right through to the contracting PCBU. Workers at all levels of the contracting chain should be consulted as part of the review process.

Engage with workers and the community

Contracting PCBUs have a duty to establish a framework that supports worker engagement and participation. For more information, see Appendix 6: Worker engagement, representation, and participation

Where relevant, contracting PCBUs should communicate and consult with landowners and local iwi that may be affected by work. For more information, see Section 4.2: Engage with local iwi

3.4 Expectations for contractors

In road and roadside work contractors are commonly awarded contracts by contracting PCBUs such as RCAs, utility or service providers, private landowners, and local authorities.

The contractor will likely have the most influence and control over the worksite and is often best placed to act as site manager.

Contractors must make sure, so far as is reasonably practicable, that the health and safety of their workers and other people are not put at risk by the work that they do.

Work collaboratively with other PCBUs in the contracting chain

Contractors should work collaboratively with all other PCBUs in the contracting chain, including:

- the contracting PCBU, designers and engineers
- any other contractors hired by the contracting PCBU for the same project/work
- subcontractors that they use (or that their subcontractors use).

Contractors should make sure:

- they have all the required information from the contracting PCBU before work begins
- they share all relevant information with other contractors or subcontractors they use.

When acting as a site manager

When acting as a site manager, the contractor should:

- aim to have a presence on site during at all times while work is being done
- have clearly defined roles and responsibilities for all workers at a worksite, especially where subcontractors are working (for example, traffic management subcontractors working alongside a roadworks crew – it should be clear who controls the site)
- have a good overview of site activities
- make sure inductions take place. For more information, see Section 29.0: Inductions
- make sure key information about health and safety is shared at the start of each day (for example, toolbox talks).

When using subcontractors

When selecting subcontractors, consider the health and safety records of potential subcontractors. This could include:

- looking for evidence of proactive steps to improve health and safety
- looking for evidence of ongoing improvement in health and safety outcomes. Is there evidence of effective worker engagement?
- using a centralised prequalification system to make it easier for potential contractors to prequalify
- checking that subcontractors have processes to provide their workers with appropriate training and competency checks. For more information, see Section 28.2: Check workers have required certifications, licences, and training

When working with subcontractors, make sure they have all the resources they need to maintain health and safety standards as agreed with the contractor and the contracting PCBU. For example:

- making sure subcontractors doing the physical work have all relevant information and are aware of the onsite rules and procedures, inductions, toolbox talks, safety plans, and reporting procedures. They should also be aware of who they are working for at the top of the contracting chain (the contracting PCBU)
- working with subcontractors to create a health and safety plan, if needed
- putting clear and effective reporting procedures in place so you can be confident that the subcontractor meets all duties.

3.5 Expectations for subcontractors

Subcontractors are PCBUs hired by the contractor to perform tasks or provide services on their behalf. Subcontractors may also be hired by another subcontractor, who is then considered a contractor.

A common example in road and roadside work is temporary traffic management services.

Sometimes subcontractors are referred to as suppliers. From a health and safety perspective, in a contracting chain their roles and responsibilities are the same.

Note: This is different to a supplier as defined by section 42 of HSWA for the purpose of describing upstream duties.

Subcontractors must make sure, so far as is reasonably practicable, that the health and safety of their workers and other people are not put at risk by the work that they do.

Subcontractors need to make sure that their workers and any subcontractors they hire have all relevant information. Subcontractors also need to be aware of the onsite rules and procedures, inductions, toolbox talks, safety plans, and reporting procedures.

Work collaboratively with other PCBUs in the contracting chain

Subcontractors should work closely with the contractor to help manage risks. For example:

- have input when initial risk management is being planned during the planning stages of a project (where reasonably practicable)
- share the contact details of the other contractors on the job and making sure that everyone knows who the key contacts are if there are issues
- alert contractors or the contracting PCBU when control measures are not adequate or need to be reconsidered, or when resources need to be reallocated to maintain the same level of health and safety standards.

3.6 Other PCBUs in the contracting chain

There are other PCBUs that may be involved in providing professional services, materials, plant, or people in and around the contracting chain. For example:

- designers
- engineers
- labour hire
- plant hire
- plant servicing and repair.

They all have the same duties as other PCBUs in the contracting chain. Some will also have additional upstream duties. For more information, see Appendix 5: Upstream duties

EXAMPLE

Engineers' duties in the contracting chain

Where the contracting PCBU is engaging an engineer to provide professional services to oversee project work on their behalf, the engineer and the contracting PCBU both have health and safety duties to the workers who are undertaking the work and others who will be affected by the work.

The contracting PCBU and the engineer should agree upon health and safety requirements and expectations. How these will be managed and monitored should be covered in their contractual agreement. This also applies to PCBUs acting as engineers when they are engaged by contractors or subcontractors.

3.7 Good contracting principles and health and safety standards

Cost-based procurement and contract negotiations should not weaken health and safety standards. Contracting PCBUs must make sure people working in their contracting chain are healthy and safe while at work, so far as is reasonably practicable.

Where relevant, the contracting PCBU should take all reasonably practicable steps to eliminate health and safety risks at the design stage of a project before going out to tender.

The contracting PCBU should make health and safety requirements or desired health and safety outcomes very clear to prospective contractors. For example:

- making sure the notice of procurement clearly says that agreed health and safety requirements also apply to all subcontractors in the contracting chain
- where health and safety standards are prescribed, such as in a request for tender (RFT), making sure they are prescriptive enough to allow potential contractors and subcontractors to make cost estimates as accurate as possible
- considering specifying an agreed minimum provisional sum to be allocated to meet agreed health and safety requirements. This can minimise the risk of health and safety funding being reallocated to other areas by the contractor or subcontractor if cost overruns occur in other areas
- considering a request for proposal (RFP) that allows scope for prospective contractors to propose better or more innovative approaches to managing health and safety risks and be willing to consider funding and supporting such proposals. This could be achieved by setting out desired health and safety outcomes and allowing the prospective contractors to propose an approach that they believe will meet or exceed the desired outcomes
- using data and knowledge gained from previous projects that have had successful health and safety outcomes to help inform good practice expectations
- allowing sufficient time for responders to prepare a well considered proposal or tender.

When reviewing proposals or tenders, the contracting PCBU should avoid focusing mainly on the price or timeframes offered. Lowest-price models generally do not allow for or encourage innovative practices. Instead, you should:

- consider the proposed methodology – is it based on safe work methods?
- consider if the proposal or tender addresses health risks as well as safety risks (not just temporary traffic management)
- check that the proposal or tender includes a detailed plan for how these risks will be managed (including for their subcontractors)
- check the proposal or tender is realistic about delivery timeframes. For example, if requiring a cap on the number of hours a worker can do in a week (to minimise the risks associated with worker fatigue), make sure delivery timeframes allow for this
- question prices that seem too low – is the proposal or tender fit for purpose and will it keep workers and other persons healthy and safe, or has it been designed for approval?

Consider any other legislative requirements when planning for risk management

As well as meeting your obligations under HSWA, you may have other industry-specific legislation and guidance that applies to aspects of your road and roadside work activities. When making decisions about how to manage risks, you should also consider your obligations under other legislation and guidelines (and any obligations of subcontractors you use).

3.8 More information on health and safety in a contracting chain

- WorkSafe's guidance: PCBUs working together – Section 2: Building health and safety into contract management
- WorkSafe's guidance: Health and safety by design: An introduction
- Government procurement rules These guidelines have been produced for government agencies but can be used by any contracting PCBU.

4.0
Te ao Māori and risk management

IN THIS SECTION:

Incorporating te ao Māori and tikanga Māori into all aspects of your work helps to promote an inclusive and culturally safe working environment for all road and roadside workers.

4.1 Introduction to te ao Māori and risk management

This section outlines some key Māori values that have a direct or indirect link to supporting good health and safety principles mentioned in these guidelines.

Te ao Māori can be described as the Māori world view. Tikanga Māori can be described as Māori customary practices or behaviours. To act in accordance with tikanga is to behave in a way that is culturally proper or appropriate.

There are many key values that underpin te ao Māori. Some of these values are significant in how they support key health and safety principles. In particular, the ways that PCBUs communicate, engage, and relate to their workers, contractors, subcontractors, and those affected by the work in the local community.

The table below summarises some Māori values with relevance to worker health and safety good practice:

VALUE	WHAT IT CAN LOOK LIKE
Whanaungatanga A sense of belonging, getting to know one another	Fostering good relationships between workers and management and between PCBUs in the contracting chain.
Manaakitanga Extending hospitality and uplifting people	Showing care for workers and their wellbeing, and respect for all workers involved in the contracting chain. Recognising the mana of every worker during worker engagement and participation. When consulting with workers on health and safety matters, acknowledge and value the skills, knowledge, and experience that each worker brings with them.
Kotahitanga Collaboration, oneness	Focusing on the 'we' – all PCBUs working together in the contracting chain towards a common goal (completing the project or job on time and within budget and keeping workers healthy and safe while doing so). Understanding who you are working with on a personal level. This can help with communication, especially when things go wrong.
Kaitiakitanga Guardianship of the land and the environment.	Engaging with local iwi who are the kaitiaki of that area. Acknowledging how the work and people effect the environment, and how the environment effects the work and the people.

TABLE 2: Examples of Māori values with relevance to worker health and safety good practice

Note: These values can be applied across multiple aspects of road and roadside work, not just the examples listed in this table.

There are also many practical day-to-day tikanga practices that should be respected and applied where appropriate. Examples of these practices are mentioned throughout these guidelines.

4.2 Engage with local iwi

Engaging with local iwi from the planning stage onwards can be helpful when incorporating te ao Māori into road and roadside health and safety.

Engaging with local iwi and community can be particularly helpful when local knowledge is needed or tikanga may need to be followed. For example, you may need to lift tapu (restriction) when:

- the work will be happening near a culturally significant site. For more information, see Section 25.0: Work in or near culturally sensitive places
- there is a fatal incident on site.

See WorkSafe case study: Tikanga approach to health and safety builds a stronger business

PART B

Managing health risks for road and roadside workers

IN THIS PART:

5.0 Introduction to managing health risks for road and roadside workers

IN THIS SECTION:

Many more road and roadside workers are affected by work-related health problems than acute injuries.

5.1 Things to know when reading Part B – Managing health risks for road and roadside workers

Road and roadside workers can be exposed to health risks that can cause short-term and long-term illnesses.

The effects of exposure to work-related health risks may not become visible for days, weeks, months, or even years. A worker's health can be harmed by a single exposure or harm can develop over time from repeated exposures.

Sections 6 to 15 of these guidelines discuss common health risks to road and roadside workers. They provide examples of control measures that can eliminate or minimise these health risks in the road and roadside work context.

Sections 16 and 17 of these guidelines provide information on how exposure monitoring and health monitoring can be used to:

- firstly, help detect health risks, and
- then be used to provide information on the effectiveness of control measures once they have been applied.

Not all examples will be appropriate to all situations. The relevance of each section and associated examples will depend on:

- the scale, scope, and nature of the work being done, and
- how any given control measure may interact with other work processes or practices (any new risks created by a control measure must also be managed and not be allowed to transfer elsewhere).

It is up to the person conducting a business or undertaking (PCBU) to assess their individual circumstances and (in consultation with workers, contractors and subcontractors in the contracting chain) determine which control measures are appropriate and reasonably practicable for their situation. For more information see Section 2.0: Risk management

Examples of risks and control measures provided here will not cover all possibilities

There may be other health-related risks that are not mentioned in these guidelines. You will need to identify and manage these risks.

You can apply control measures that are not suggested in these guidelines, if you are satisfied that they provide equal or better protection.

5.2 The relationship between health and work

Work can affect health and health can affect work.

Work-related health risks fall into five categories, and health-related safety risks fall into four categories.

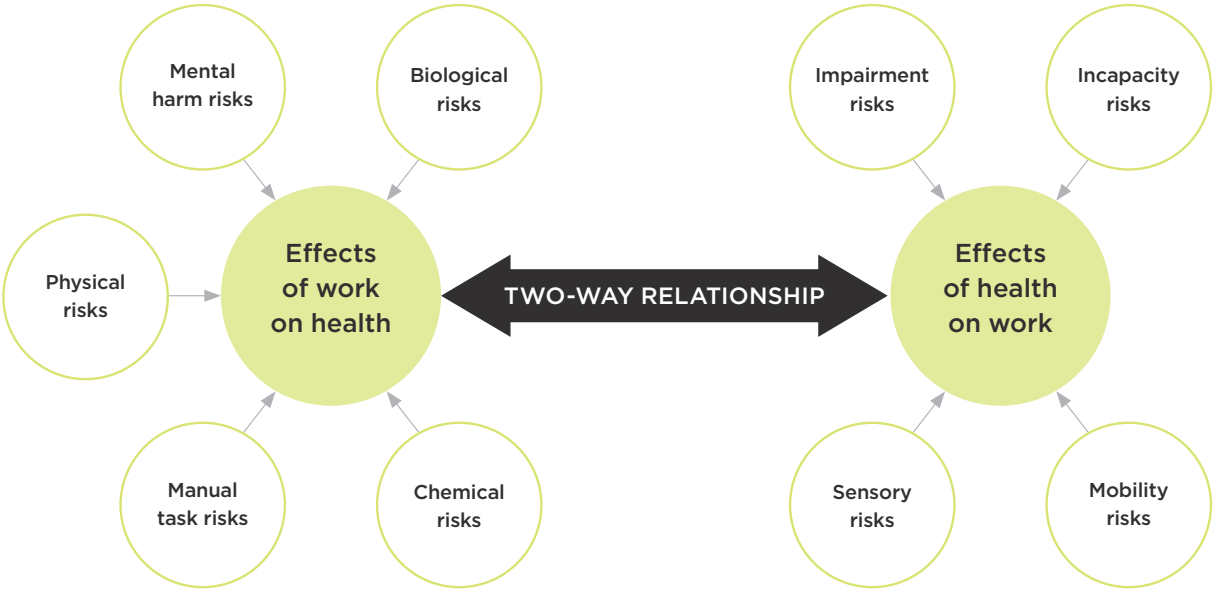

FIGURE 4: Relationship between health and work

Effects of work on health

The table below lists work-related risks and examples of how they can harm a workers' health:

TYPE OF RISK	EXAMPLE OF HARM
Physical risks	Exposure to noise may lead to noise-induced hearing loss
Chemical risks	Exposure to solvents may lead to occupational asthma
Biological risks	Exposure to animal bacteria may lead to sudden and severe illnesses
Manual task risks	Repeated lifting of heavy or bulky items may lead to back injury
Mental harm risks	Bullying at work may lead to work-related stress

TABLE 3: Examples of work risks and how they can harm a workers' health

Effects of health on work

The table below lists health-related risks and examples of how they can lead to safety incidents and acute harm:

TYPE OF RISK	EXAMPLE OF HARM
Sensory risks	Changes in a worker's hearing or eyesight may prevent them from correctly or quickly identifying and reacting to a workplace risk
Impairment risks	Fatigue may lead to reduced concentration
Mobility risks	Physical restrictions may prevent a worker from moving out of the way of an oncoming vehicle
Incapacity risks	An unknown or poorly controlled heart condition may lead to a worker suddenly losing consciousness during a safety critical task

TABLE 4: Examples of health risks and how they can affect worker safety

You should consider both the effects work has on health and the effects health has on work when managing the risks for road and roadside work.

5.3 Work-related health problems often have more than one cause

Often there can be more than one thing (or factor) that could lead to a worker's health being harmed. Examples of these factors include:

- **Physical** factors, such as task duration, task repetition, forces or loads, and awkward postures.
- **Environmental** factors, such as noise, temperature, and lighting
- **Organisational** factors, such as rosters and shifts, training, and worksite communication.
- **Individual** factors, such as body size, fitness, previous injures, and fatigue.
- **Psychological** factors, such as job demands, stress, workplace relationships, and available support.

These factors can be cumulative – each factor alone may not create a risk, but when combined these factors may cause harm.

Workers may be 'managing their work okay' until additional events push them towards discomfort, injury, or mental harm.

For example, consider a worker who works in a job that involves a repetitive task that also requires concentration. Usually, they can take regular breaks and swap tasks with a co-worker to avoid doing the same task for a long time (which could lead to musculoskeletal injuries). However:

- their co-worker calls in sick, so they cannot rotate tasks
- the project is running behind schedule, so they take shorter breaks and even skip some breaks
- they start feeling physical discomfort while working but ignore it and continue to work due to pressure to get the job done
- their discomfort starts distracting them from the task, increasing the risk of them making a mistake

By the end of the week what started as a mild ache or pain has begun developing into a serious condition. If you pay early attention to discomfort, you can control the risks before serious harm occurs.

5.4 Eliminate health risks at the planning and design stage

Where reasonably practicable, potential risks to worker health should be assessed and eliminated at the planning and design stage of the work. For example, this can be done by:

- planning and scheduling reasonable completion dates and avoiding impractical deadlines
- choosing work practices and methodologies that reduce harmful exposures (even if these may take longer)
- choosing machinery and tools that present the least risk to workers
- choosing the least harmful products and substances
- designing work so roles and responsibilities are clear, which allows for early resolution of issues
- planning for and allocating enough workers to a job or project so workers can have regular breaks and take sick leave without putting pressure on other workers.

6.0
Noise

IN THIS SECTION:

Exposure to excessive noise can lead to permanent damage to road and roadside workers' hearing.

6.1 Introduction to managing noise risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers of exposure to excessive noise.

Noise induced hearing loss (NIHL) is permanent and has a significant impact on a worker's life. Loud noise can also lead to tinnitus – a persistent ringing or buzzing in the ears. Some medications and exposure to certain chemicals can make workers more susceptible to hearing damage from loud noise.

Noise is a common hazard on many road and roadside worksites. As a general rule, if people have to raise their voice (shout) to be heard in conversation, the level of noise may be too high.

6.2 Control measures for noise risks

Eliminate the source of the noise

Consider changing work processes to eliminate hazardous noise.

Minimise exposure to noise

If eliminating the source of the noise is not reasonably practicable, look at how you can minimise the level of noise your workers are exposed to.

Examples of how to minimise noise include:

- replacing noisy plant, equipment, and vehicles with quieter plant, equipment, and vehicles
- isolating noise from workers or workers from noise (such as installing soundproofed operating booths or noise-reducing engine covers)
- keeping workers that do not need to be there out of the area
- fitting silencers (such as mufflers or enclosures) on noisy plant
- providing acoustic barriers
- making sure plant is well maintained to reduce noise from friction, vibrating surfaces, mechanical impacts, high velocity air flow or liquid flow, and fan blades.

Personal protective equipment (PPE)

You should only rely on hearing protection after you have taken all other reasonably practicable steps to minimise exposure to noise.

When providing hearing protection to your workers, make sure that:

- it is the right fit for the worker
- it is providing the right level of protection for the noise levels they will be exposed to. Avoid overprotection – requiring hearing protection when there is no risk or requiring hearing protection that blocks out more noise than necessary
- workers are trained in how to correctly wear, clean, and store their hearing protection (for example, earmuffs will not provide proper protection if they are worn over hoodies)
- any new risks are also managed. Hearing protection can restrict both a worker's awareness of what is around them, and their ability to communicate (such as workers not being able to hear approaching mobile plant or other traffic while wearing hearing protection).

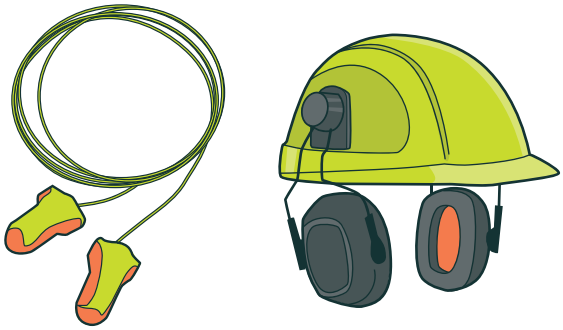

FIGURE 5: Examples of hearing protection

6.3 Monitor noise exposure and worker hearing

Once you have taken all reasonably practicable measures to eliminate or minimise the risks from noise, check if ongoing noise exposure monitoring is needed.

Ongoing noise exposure monitoring can tell you if control measures are being effective at minimising the risk. It can also help you decide what level of hearing protection is required and help you avoid overprotection. For more information, see Section 16.0: Exposure monitoring

Consider including hearing tests in any worker health monitoring program. For more information, see Section 17.0: Health monitoring

6.4 More information on noise

WorkSafe's Noise Toolkit

7.0
Manual tasks

IN THIS SECTION:

Some manual tasks are hazardous and may cause musculoskeletal disorders for road and roadside workers.

7.1 Introduction to managing manual task risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers associated with manual tasks.

Manual tasks are any activity requiring a person to lift, lower, push, pull, carry, or otherwise move, restrain, or hold any person, animal, or thing. It is sometimes also referred to as manual handling.

Examples of manual tasks include:

- lifting gear in or out the back of a truck
- handling kerbside rubbish and recycling bins
- dragging gear, rubbish, or vegetation
- carrying and setting up traffic management equipment
- connecting, disconnecting, and manoeuvring trailers such as VMS (variable message sign) boards
- sweeping, digging, or using hand rollers
- carrying and throwing bags of hot/cold mix
- operating machinery
- office work, particularly if at a poorly set up work area.

Risks from manual tasks can include:

- sprains and strains of muscles, ligaments, and tendons
- back injuries, including damage to the muscles, tendons, ligaments, spinal discs, nerves, joints, and bones
- joint and bone injuries or degeneration, including injuries to the shoulder, elbow, wrist, hip, knee, ankle, hands, and feet
- nerve injuries or compression, for example carpal tunnel syndrome (CTS)
- cuts or lacerations from using sharp objects or exposure to sharp objects (for example during rubbish or recycling collection and gardening or vegetation management)
- hernias
- chronic pain
- muscular and vascular disorders from vibration. For more information, see Section 8.0: Vibration

Manual tasks can be a major factor in the development of musculoskeletal disorders.

Musculoskeletal disorders may develop over time or occur suddenly from a specific event or series of events. They may start as a mild ache or pain and develop into a serious condition. You should pay early attention to discomfort, so you can control the risk before serious harm occurs.

Multiple factors usually combine to cause musculoskeletal disorders. For more information, see Section 5.3: Work-related health problems often have more than one cause

7.2 Control measures for manual task risks

Eliminate manual tasks

Consider using alternative work methods that do not require manual tasks. For example, use automated systems for deploying traffic cones or mechanical lifting devices for lifting and emptying kerbside rubbish and recycling bins.

Minimise exposure to manual tasks

If eliminating manual tasks is not reasonably practicable, look at how you can minimise the risks associated with manual tasks.

Examples of how to minimise manual task risks include:

CONTROL MEASURE	EXAMPLES
Avoid work set ups where the worker has to sit, stand, or reach awkwardly to do their job	– provide a camera or mirrors on mobile plant so workers do not have to twist or lean to see where they are going or what their machine is doing – provide tools or equipment that can be adjusted to suit the height of the worker, so they do not have to reach too high or be hunched over while using it.
Choose tools and machinery with built-in controls to reduce the physical impacts on the operator	– select equipment that is easy to handle – make sure that the right tool is available and used for the right job – make sure tools and machinery are regularly maintained.
Limiting the amount of heavy lifting that is required of workers	– use kerb block lifting attachments – use mechanical waste/recycling collection systems – replace heavy items with those that are lighter or smaller – deliver goods or materials directly to the point of use so they do not need to be carried to the work site manually – have weight labels on commonly handled equipment
Move workers between tasks to vary the physical demands (sometimes called task rotation or job variation)	– planning tasks that involve walking – moving between tasks that involve sedentary work and movement – planning light work after repetitive lifting work

TABLE 5: Control measures for manual task risks and examples

You should provide appropriate information, training, instruction, and supervision for workers so they know how to protect themselves from risks to their health and safety when working. This includes how to use equipment.

Manageable job demands and a healthy workplace culture that supports good communication will also reduce the risks of musculoskeletal injury caused by manual tasks.

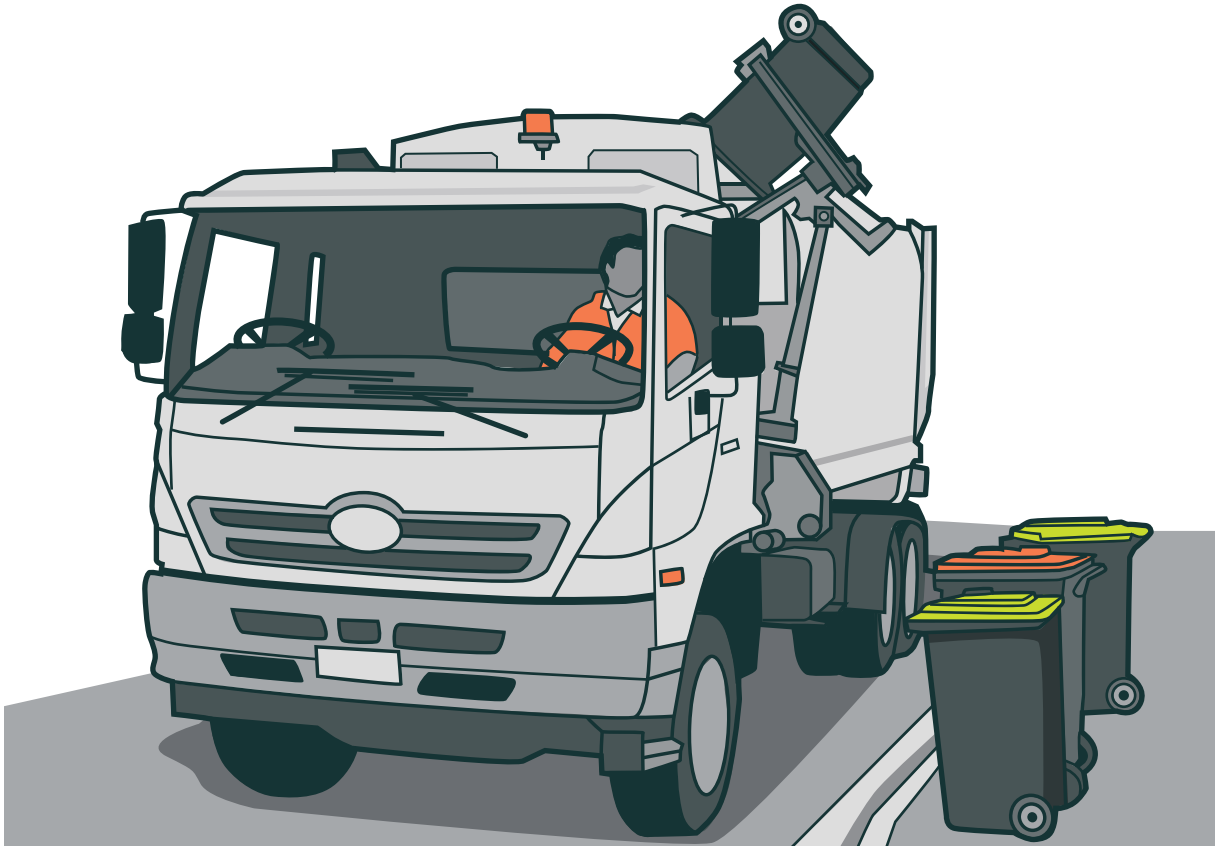

FIGURE 6: Example of an automated system that reduces manual tasks (also keeps worker in a safer location inside the vehicle)

FIGURE 7:
Example of labelling for heavy items

Personal protective equipment (PPE)

PPE should only be used to manage the risks from manual tasks after all other reasonably practicable steps have been taken to reduce these risks.

Gloves and safety boots should be worn to protect against cuts and crushed toes.

7.3 More information on manual tasks

WorkSafe's manual handling webpage.

8.0 Vibration

IN THIS SECTION:

Exposure to excessive vibration can cause permanent and disabling damage to road and roadside workers' bodies.

8.1 Introduction to managing vibration risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers of being exposed to vibration while working.

There are two main types of vibration that can cause harm to workers:

Whole body vibration

Whole-body vibration occurs when vibration is passed through the body from a surface where a worker sits or stands. This occurs most often in workers driving machinery or other vehicles over rough or uneven surface.

Whole body vibration can affect the body in several ways and can contribute to several health disorders.

Hand-arm vibration

Hand-arm vibration occurs when vibration is passed through the hands and arms, usually from hand or power tools.

Workers can develop Hand-Arm Vibration Syndrome (HAVS), Carpal Tunnel Syndrome (CTS), and other musculoskeletal conditions if they regularly and frequently use hand-held power tools and machines, especially for long periods of time.

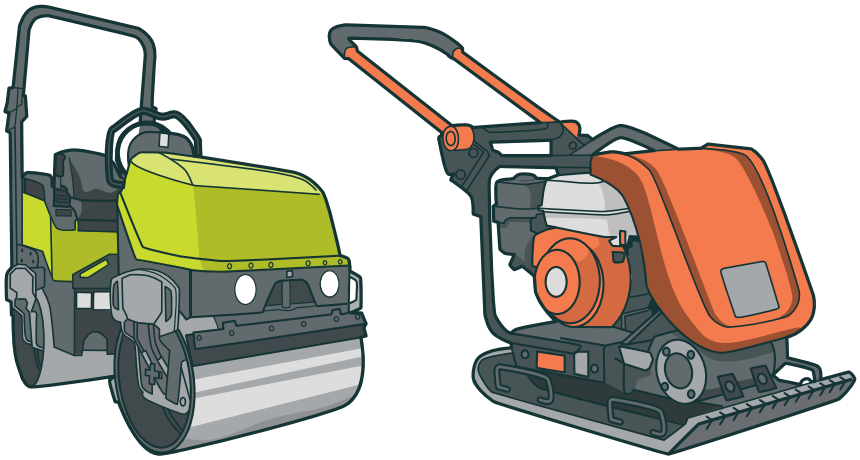

FIGURE 8:
Examples of machinery that can cause vibration-related harm

Road and roadside workers can be exposed to harmful levels of vibration through various sources. For example, from:

- spending long periods of time sitting or standing on mobile plant, vehicles, or machinery that vibrates
- using tools or machinery that vibrate for long periods of time, such as plate compactors, jackhammers, cutting or grinding tools, and powered gardening tools.

Working in cold conditions can increase the harmful effects of vibration on the body.

8.2 Control measures for vibration risks

Eliminate exposure to vibration

Consider using work methods that do not require using powered hand tools or sitting or standing on vibrating machines (for example, use tools or machines operated by remote or use mobile plant-mounted tools rather than hand tools).

Minimise exposure to vibration

If eliminating the source of the vibration is not reasonably practicable, look at how you can minimise the amount of vibration your workers are exposed to.

Examples of how to minimise vibration include:

- using power tools and plant that produce less noise and vibration
- using methods of work that produce less vibration (for example, use hydraulic rather than compressed air tools)
- isolating vibrating machinery, mobile plant, or vehicles from the operator by providing fully independent seating
- choosing power tools and plant that direct cold air (for example, from the tool's exhaust) away from hands
- training workers on choosing the right tool or plant for the job (one which has the appropriate size, power, and capacity for the task and work conditions)
- making sure workers are trained in how to safely use the plant or tools in a way that minimises the levels of vibration
- maintaining power tools and machines regularly. Repair faults as soon as possible. Make sure suspension systems are well maintained
- maintaining vehicle seats and seat suspension
- limiting the time workers are exposed to vibration, especially while working in cold conditions (for example, job rotation, lots of breaks)
- discussing with workers how exposure to vibration can harm them and training them in how to identify the symptoms of HAVS and CTS. Tell workers how they can report their symptoms.
- reducing exposure to working in the cold, providing warm/hot drinks, and having workers take breaks in a warm room.

Personal protective equipment (PPE)

PPE should only be used to manage the risks from vibration after all other reasonably practicable steps have been taken.

Thermal PPE can be used to keep workers warm and dry (for example, thermal, non-slip gloves).

Note: Anti-vibration gloves reduce worker exposure to high frequency vibration but not low frequency vibration. However, in general, gloves can be helpful because they keep your workers' hands warm. When choosing gloves, pick non-slip gloves that are not too thick. Thick gloves mean workers have to grip tighter, increasing the chance of HAVS and CTS and other musculoskeletal conditions.

Use mats or insoles to reduce foot-transmitted vibration.

8.3 Monitoring vibration exposure

Once you have taken all reasonably practicable measures to eliminate or minimise the risks from vibration, check if ongoing vibration exposure monitoring is needed.

Ongoing monitoring can help inform you whether control measures are effective at minimising the risk. For more information, see Section 16.0: Exposure monitoring

Consider including monitoring for signs and symptoms of vibration-related illness or injury into your health monitoring programme. For more information, see Section 17.0: Health monitoring

8.4 More information on vibration

- WorkSafe's guidance: Whole body vibration – information for businesses
- WorkSafe's guidance: Hand-arm vibration - information for businesses

9.0 Airborne contaminants

IN THIS SECTION:

Breathing in airborne contaminants can lead to lung disease and other serious harm to road and roadside workers' health.

9.1 Introduction to managing airborne contaminant risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers of being exposed to harmful airborne contaminants.

Airborne contaminants, such as dust, diesel exhaust, chemical vapours, and fumes can cause damage and disease (like lung cancer) when inhaled.

If workers could be exposed to harmful airborne contaminants while working, consider getting an exposure assessment done to better understand the risk.

If the assessment indicates excessive or unacceptable risk from exposure to airborne contaminants, you should take action to eliminate or minimise worker exposure to those airborne contaminants.

9.2 Dust

Airborne dust is a common occurrence at road and roadside worksites.

You must manage the risks to worker health caused by exposure to different types of dust, including:

- respirable crystalline silica dust (see respirable crystalline silica below)
- metal dust
- asbestos dust (see asbestos below)
- other hazardous inhalable or respirable dusts
- airborne soil contaminants.

Respirable dust is dust that penetrates deep into the lungs when inhaled. Dust particles can permanently damage a worker's lungs.

Road and roadside workers can be exposed to many difference sources of dust, including:

- dust kicked up from unsealed roads or worksites
- dust produced during concrete cutting
- dust from using powdered products such as cement
- dust or dirt produced during excavation or gardening
- wind-blown dust or dust stirred up while sweeping.

Respirable crystalline silica (RCS)

Silica is a natural substance found in concrete, bricks, rocks, stone, sand, and clay.

RCS dust is created when materials containing silica are cut, ground, drilled, or otherwise disturbed.

RCS particles are extremely small, and they cannot always be seen with the naked eye.

Workers who inhale RCS are at risk of permanent lung damage including silicosis and lung cancer.

PCBUs must manage the risk of RCS.

For more information, see WorkSafe's webpage: Silica dust in the workplace

Asbestos

Asbestos is a naturally occurring mineral made up of many small fibres.

Asbestos can cause lung cancer and illnesses such as asbestosis and mesothelioma.

The main way people are exposed to asbestos is by breathing in air that contains asbestos fibres.

Road and roadside workers could be exposed to asbestos through things like windblown soil from excavation of old uncontrolled landfill sites or while exposing old underground asbestos pipes.

PCBUs must manage the risk of asbestos exposure.

For more information, see WorkSafe's webpage: Asbestos

Control measures for dust exposure

If you are unable to eliminate dust from the worksite, look at what you can do to minimise the risk. This might mean doing a job differently or making sure you have the right equipment for the job.

- Before work starts, check that any land that may be disturbed does not contain dangerous soil contaminants. If there is a risk that contaminated soil is present, you may need to hire a suitably qualified environmental practitioner to make an assessment. For more information, see The Ministry for the Environment's webpage: National Environmental Standard for assessing and managing contaminants in soil to protect human health
- Control dust by wetting work materials and work areas with clean water.
- Where relevant, choose equipment and machinery with good dust control and dust collection systems.
- Schedule potential high-exposure work for times where there are fewer workers and others around (for example, during breaks or after normal working hours).
- Encourage workers to leave dust-covered clothes at work to be cleaned, rather than taking them home. Workers should not be using compressed air to dust themselves down, as this spreads dust particles.
- Encourage workers to wash hands before eating and drinking so that dust particles are not ingested.
- Provide workers with appropriate respiratory protective equipment (RPE). RPE should only be considered when all other reasonably practicable means of control have been applied and a risk still remains. For more information, see WorkSafe's webpage: Respiratory Protective Equipment (RPE)

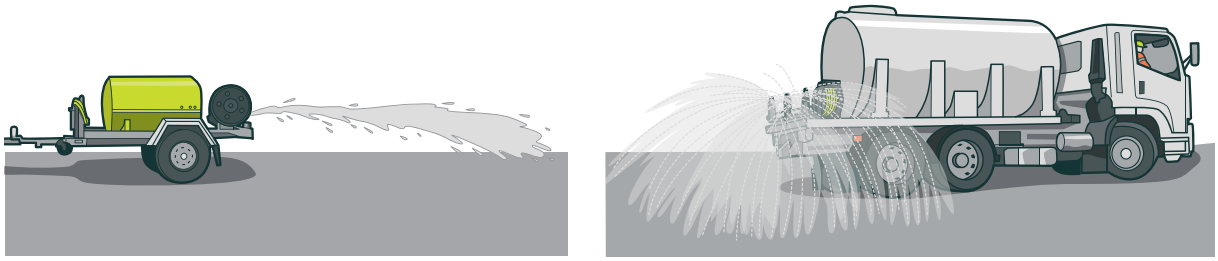

FIGURE 9: Examples of using water to dampen dust at unsealed worksites

9.3 Fumes, gases, vapours, and smoke

Airborne contaminants such as fumes, gases, vapours, and smoke can cause harm to road and roadside workers. Examples include:

- paint application operations
- solvent spray cleaning (some solvents are known or suspected to cause cancer)
- kerbside weed control chemicals
- welding metal fumes (metal oxides produced from welding)
- bitumen or asphalt fumes (bitumen and asphalt contain class 1 carcinogens that can be inhaled and absorbed through intact skin)
- de-icing agent preparation and mixing
- hydrogen sulphide (commonly present in geothermal areas, sewers, cesspools, and areas of stagnant water, particularly in enclosed spaces)
- toxic fumes, gases, or vapours from historically contaminated soil (such as old landfill sites).

The risk is more significant when working in confined spaces such as trenches, tunnels, or any other environment where there is poor air circulation.

The health effects of these contaminants depend on their composition, airborne concentration, the duration of exposure, and frequency of exposure. Effects can include:

- metal fume fever (a short-term painful ailment with symptoms of fever and chills). For more information, see WorkSafe's webpage: Welding
- chronic obstructive lung disease
- pneumoconiosis (lung disease due to accumulation of mineral or metallic particles)
- occupational asthma
- irritation of the eyes and respiratory tract
- lung and other cancers
- respiratory failure and death.

Control measures for exposure to fumes, gases, vapours, or smoke exposure

If exposure to fumes, gases, vapours, or smoke cannot be eliminated, look at how you can minimise the risk of exposure. For example, by:

- substituting the substance for a less harmful or volatile substance
- automating or redesigning the work process so workers do not have to be near to the source of the airborne contaminant
- using equipment with enclosed cabs with good ventilation to maintain air quality. For more information, see WorkSafe's webpage: Maintaining air quality in enclosed cabins
- before work starts, checking that any land that may be disturbed does not contain dangerous soil contaminants. If there is a risk that contaminated soil is present, you may need a suitably qualified environmental practitioner to make an assessment. For more information, see The Ministry for the Environment's website: National Environmental Standard for assessing and managing contaminants in soil to protect human health

Providing RPE should only be considered when all other reasonably practicable control measures have been applied and a risk still remains. For more information, see WorkSafe's webpage: Respiratory Protective Equipment (RPE)

9.4 Diesel exhaust

Diesel engine exhaust is a complex mixture of gases and particles including carbon monoxide, nitrogen dioxide, sulphur dioxide, and diesel particulate matter (DPM). Diesel engine exhaust can cause cancer.

Road and roadside workers may be exposed to diesel exhaust from things like diesel-powered mobile plant and diesel-powered generators, and from diesel exhaust from passing vehicles.

Most outdoor work environments will have low concentrations of diesel exhaust because it can disperse easily, so the risk to workers will be low. However, some environmental factors can limit the dispersal of diesel exhaust and make its concentration higher. Examples of such factors include:

- tunnels and trenches (including cut and cover roads)
- city streets (where tall buildings can create a canyon effect which stops diesel exhaust from dispersing)
- highways with acoustic barriers in place (while blocking noise, these barriers can also block airborne pollution from dispersing)
- worksite sight screens (these can also block airborne pollution from dispersing).

Short-term acute symptoms of diesel exhaust exposure include:

- irritation of the eyes, nose, and throat
- headaches
- dizziness or light-headedness
- nausea
- coughing
- laboured breathing, or having difficulty breathing
- tightness of chest.

Exposure to excessive levels of carbon monoxide can lead to loss of consciousness and death.

Some workers may be more sensitive to diesel exhaust or air pollution, for example those with certain pre-existing conditions.

Long-term exposures can lead to more serious, chronic health problems such as cardiovascular disease, cardiopulmonary disease, and cancer.

Control measures for diesel exhaust exposure

PCBUs should take steps to manage the risk of harm from diesel exhaust exposure, so far as is reasonably practicable. Examples of ways to manage the risks include:

- choosing plant that does not run on diesel (check that alternative options do not introduce other risks that outweigh the risks of using diesel)
- using equipment with enclosed cabs with good ventilation to maintain air quality. For more information, see WorkSafe's webpage: Maintaining air quality in enclosed cabins
- making sure engines in vehicles and plant are well maintained
- making sure site vehicles and plant are not left idling unnecessarily
- keeping workers that do not need to be there away from machinery and plant while it is operating
- providing indoor break facilities away from areas subject to air pollution
- directing generator exhausts away from where people are working or congregating
- keeping cab doors and windows closed.

In high-risk locations, such as tunnels and trenches, consider:

- seeking advice from a specialist such as a ventilation engineer since you may need to provide mechanical ventilation
- putting in place a diesel emissions management plan
- limiting work undertaken in areas where exhaust is contained and cannot be ventilated
- rotating workers frequently.

Note: Work within tunnels may be subject to requirements under the mining regulations. For more information, see WorkSafe's webpage: Ventilation in underground mines and tunnels

Providing RPE should only be considered when all other reasonably practicable control measures have been applied and a risk still remains. For more information, see WorkSafe's webpage: Respiratory Protective Equipment (RPE)

Tunnels and trenches can develop dangerously high concentrations of diesel exhaust and other air contaminants that can be difficult to monitor without specialised equipment. Consider bringing in an occupational hygienist to monitor and advise on how to manage this risk.

For more information, see Section 16.0: Exposure monitoring

9.5 Monitoring exposure to airborne contaminants

Once you have taken all reasonably practicable steps to eliminate or minimise the risks from airborne contaminants, you should consider if ongoing monitoring of air quality is needed.

Ongoing monitoring can help inform whether control measures are or remain effective at minimising the risks from airborne contaminants. For more information, see Section 16.0: Exposure monitoring

You may need to add appropriate tests to the health monitoring program. A suitably qualified person should provide advice on what tests or health monitoring may be appropriate. For more information, see Section 17.0: Health monitoring

9.6 More information on airborne contaminants

- WorkSafe's guidance: Silica dust in the workplace
- WorkSafe's Asbestos website
- WorkSafe's Respiratory protective equipment (RPE) website
- WorkSafe's guidance: Maintaining air quality in enclosed cabins
- WorkSafe's Welding website
- WorkSafe's Hydrogen sulphide website
- Ministry for the Environment's National Environmental Standard for assessing and managing contaminants in soil to protect human health
- WorkSafe's guidance: Ventilation in underground mines and tunnels

10.0
Hazardous substances

IN THIS SECTION:

Exposure to hazardous substances can cause serious harm to road and roadside workers.

10.1 Introduction to managing hazardous substance risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers when working with hazardous substances.

A hazardous substance is any product or chemical with any of the following properties:

- Explosive: explodes or causes explosion.
- Flammable: ignites easily and burns rapidly.
- Oxidising: could be gaseous, solid, or liquid, and can cause or intensify fire and explosion.
- Toxic: can harm people if it enters the body through contact, being inhaled, or ingested. The effects can range from mild to life threatening, and can be immediate or long-term.
- Corrosive: can cause severe skin burns and eye damage.
- Ecotoxic: is toxic to the environment.

Examples of hazardous substances road and roadside workers could be exposed to include:

- hot cutback bitumen
- cold or hot mix (polycyclic aromatic hydrocarbons)
- cement
- fuels and oils (for mowers, line trimmers, or other machinery)
- roadmarking materials (thermosplastic paint, cold applied plastic, or hot-melt glue)
- paints (especially when applied using high pressure equipment)
- disinfectants
- methylated spirits or mineral turpentine
- weed spraying chemicals
- hydrated lime
- chemicals collected during waste chemical collection.

The Hazardous Substances Regulations set out the rules for hazardous substances, such as requirements for:

- when certified handlers are required
- safety data sheets
- labelling
- storage (including temporary storage and storage limits)
- emergency response plans
- supervision and training for workers.

FIGURE 10: Examples of hazardous substance signs

For more information and specific guidance, see WorkSafe's webpage: Hazardous substances

Some substances may also fall under the requirements of the Land Transport Rules: Dangerous Goods 2005

10.2 Control measures for hazardous substances

Ideally, you should eliminate any hazardous substances you do not need.

Minimise potential exposure to hazardous substances

If you cannot eliminate a hazardous substance, you should consider:

- substituting the substance for one that poses less risk (for example, using bitumen emulsion instead of hot cutback bitumen)
- automating systems so workers do not have to get near the substance, where possible
- installing barriers between workers and the hazardous substance
- making sure the hazardous substance is handled or prepared in an area with good ventilation
- rotating workers on jobs involving hazardous substances to reduce the time they are exposed to the hazardous substance.

FIGURE 11: Example of automated spraying system to limit worker exposure to the chemical being used (also keeps worker in a safer location inside the vehicle)

Personal protective equipment (PPE)

PPE should also be provided to protect from accidental exposure.
Examples of PPE include:

- long pants and long-sleeved shirts (made from breathable or waterproof fabric – depending on the substance the workers will be exposed to)
- protective eyewear
- gloves
- face shields.

Make sure the PPE is appropriate for the type of hazardous substance the worker will encounter.

FIGURE 12: Example of a worker wearing the correct PPE for the substance being handled

For more detailed information, see WorkSafe's webpage: Hazardous substances risk management

10.3 Information from suppliers of hazardous substances

The suppliers of chemicals or substances that could be hazardous to a worker's health must provide:

- information on the properties of the chemical or substance, and
- how to use the product correctly and safely (known as a safety data sheet).

The PCBU that has control of the worksite must make sure this information can be accessed by workers without difficulty, in hard copy, electronic, or other form.

Safety data sheets include information on:

- correct storage, transport, and disposal requirements
- safe preparation and use instructions
- any specialised PPE that is required
- first aid directions in the case of any accidental exposure
- what to do in the event of a spill or fire.

For more information, see WorkSafe's webpage: Hazardous substances safety data sheets

For more information on upstream duties for suppliers of plant, substances, or structures, see Appendix 5: Upstream duties

10.4 Hazardous substance emergency plans

The PCBU must have an emergency plan that is relevant to the hazardous substances stored or used at the worksite.

The emergency plan needs to cover procedures for dealing with hazardous substance-related emergencies such as:

- bitumen spills (including burns)
- a worker being/getting poisoned after ingesting or inhaling a toxic substance
- a worker being burned by a corrosive substance
- a worker accidentally being injected with a substance (such as paint) while using high pressure equipment
- a fire caused by flammable or oxidising substances
- hazardous substances leaking or spilling from their containers, injuring people, and contaminating land or waterways.

For injuries that require very specific treatment (such as a bitumen burn or paint injection injuries) consider providing workers with treatment cards. These can be provided to medical professionals to ensure appropriate treatment in case of an injury.

Emergency plans need to be shared with all PCBUs operating within the contracting chain whose workers may be affected.

For more information, see WorkSafe's webpage: Hazardous substances emergency plans

10.5 Information, instruction, training, and supervision

Information, instruction, and training for working with hazardous substances

Make sure workers are aware of the presence of any hazardous substance in their work area. This includes any other PCBUs operating at the same worksite.

Workers need training in:

- the health risks and safety issues associated with the hazardous substances they work with
- how to safely use, handle, store and dispose of the substances
- the safe use of associated equipment, including PPE
- their obligations under the regulations
- their responsibilities, including actions to be taken in an emergency.

This training should be followed by practical supervised experience.

Even if a worker has had similar training previously (for example, at a different site or with a different contractor), they may still need site-specific training if they are new to the worksite.

You must keep a record of training and instruction provided to each worker and make it available to inspectors or compliance certifiers.

Supervision of workers using hazardous substances

You must provide supervision, where necessary, to protect workers from the risks of working with, or being exposed to, hazardous substances. This includes supervising the use of equipment used for hazardous substances.

Deciding what supervision is necessary will depend on the nature of the risks and the knowledge and experience of the worker. It should reflect:

- the work involved
- the risks associated with the work
- any measures in place to manage the risks.

For more information, see WorkSafe's webpage: Information, instruction, supervision and training

10.6 More information on hazardous substances

- WorkSafe's Hazardous substances website
- WorkSafe's hazardous substances Risk management website
- WorkSafe's hazardous substances Safety data sheets website
- WorkSafe's hazardous substances Emergency plans website
- WorkSafe's hazardous substances Information, instruction, supervision and training website
- Health and Safety at Work (Hazardous Substances) Regulations 2017

11.0
Biological hazards

IN THIS SECTION:

Exposure to biological hazards present at worksites can cause serious harm to road and roadside workers.

11.1 Introduction to managing biological hazard risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers of working being exposed to biological hazards.

Biological hazards include bacteria, fungi, viruses, plant, and animal particles. They can cause a range of adverse health effects including infectious diseases, respiratory diseases, cancer, and gastro-intestinal illnesses.

Sources of biological hazards in road and roadside work can include:

- human waste (urine, faeces, vomit)
- human blood or body tissue
- food and food waste
- contaminated water
- dead animals (roadkill)
- animal urine and faeces
- stagnant roadside water sources
- decaying vegetation, woodchips, compost, potting mix
- needles and syringes
- poisonous plants
- contaminated soil.

11.2 Control measures for biological risks

When managing risks from biological hazards:

- make sure any sources of harmful biological matter are identified and removed or isolated by someone trained to do so safely before work begins or continues
- before work starts, check that any land that may be disturbed does not contain any harmful biological contaminants. If there is a risk of contaminated soil being present, you may need a suitably qualified environmental practitioner to make an assessment. For more information, see the Ministry for the Environment's webpage: National Environmental Standard for assessing and managing contaminants in soil to protect human health
- use tools to handle the biological matter where possible
- wear suitable PPE when working near or dealing with potentially harmful biological matter

- provide mobile handwash stations for workers who are not at depots or near handwashing facilities. Sanitiser is not a substitute for handwashing in these cases, though it may help
- practice good personal hygiene (washing and drying hands, covering mouth when sneezing or coughing, cleaning cuts and scratches)
- practice good housekeeping (regularly clean washrooms, toilets, food preparation and storage areas, and break rooms)
- consider if additional immunisations are needed (for example tetanus, hepatitis A or B). For more information, see The Ministry of Health's webpage: Immunisation Handbook 2020

For more information on when you need to provide workers with showering facilities, see Section 26.3: Additional facilities

In some circumstances, bodily fluids (such as those resulting from a vehicle crash) will also need to be treated in accordance with tikanga practices.

11.3 More information on biological hazards

- Ministry of Health's guidance: Workplace infectious disease prevention
- Ministry of Health's Ministry of Health Immunisation Handbook 2020
- WorkSafe's guidance: General Risk and Workplace Management – Part 1, Section 2
- Standards New Zealand NZS4305 Management of healthcare waste
- WorkSafe's guidance: Prevention and control of leptospirosis
- WorkSafe's guidance: Legionnaires' disease and legionellosis
- The Ministry for the Environment's National Environmental Standard for assessing and managing contaminants in soil to protect human health

12.0 Temperature extremes

IN THIS SECTION:

Exposure to extreme hot or cold temperatures can cause serious harm to road and roadside workers.

12.1 Introduction to managing extreme temperature risks

This section offers guidance for PCBUs on managing the risks to road and roadside workers of working in extreme temperatures.

The outdoor nature of most road and roadside work means road and roadside workers are particularly vulnerable to the effects of working in extreme temperatures.

12.2 Working in extreme heat

Working in extremely hot environments can put workers' bodies under stress.

If their bodies have to work too hard to stay cool, it can cause heat-related illness and injuries. These can be fatal if ignored.

Heat-related illness and injuries are a risk, especially when working outdoors in summer or in high humidity, or when exposed to radiant heat.

High body temperatures that can cause harm to workers can occur:

- in the summer months
- in humid environments
- during highly physical activities (such as manual rubbish/recycling bin collection, manual excavation, asphalt laying, and roadside gardening)
- when warm or heavy clothing is being worn, including PPE
- when working near a source of radiant heat. For example:
  - near machinery or generators
  - during asphalt or emulsion application
  - standing on hot road surfaces.

Control measures for work in extreme heat

While it may not be possible to eliminate extreme heat in the outdoor environment, there are steps that can be taken to minimise the effects of working in extreme heat. For example, by:

- replacing heat-producing plant with plant that produces less heat
- insulating heat-producing plant or use heat screens to reduce radiant heat
- using mechanical aids to reduce worker effort
- making sure vehicle and mobile plant cabs have air conditioning
- providing protection from the sun while working
- scheduling work for cooler times of the day or year

- frequently rotating workers on tasks
- allowing extra rest breaks and providing climate-controlled rest facilities away from the heat and sun
- educating workers on the importance of staying hydrated, making cool drinks available at all times, and encouraging them to drink water at the beginning and end of the day
- encouraging self-paced work where possible
- making sure workers are acclimatised to the conditions
- avoiding putting workers with pre-existing medical conditions that may make them susceptible to heat stress in jobs where they will be exposed to extreme heat
- making sure PPE is as light as possible and breathable (without compromising its protective function). For more information, see Section 27.5: Make sure PPE does not create new risks
- training workers on how to identify signs and symptoms of heat-related illness in themselves and their workmates. For more information, see WorkSafe's guidance: Working safely in extreme temperatures

Provide PPE for working in extreme heat

PPE can help protect workers against the effects of extreme heat by shielding workers from a hot environment or radiant heat source (such as when laying asphalt). Examples of PPE include:

- heat-reflective clothing
- face shields
- sunhats
- heat-resistant footwear.

Sweating is the body's main way of keeping cool. Make sure that, where possible, PPE and uniforms are made from light, breathable materials so workers can sweat freely.

12.3 Working in extreme cold

Working in extremely cold environments can put workers' bodies under stress.

If their bodies have to work too hard to stay warm, this can cause cold-related illness and injuries which can lead to permanent tissue damage and death.

Low temperatures can occur:

- in wet conditions (being damp or wet can significantly increase the rate a body cools)
- winter conditions (frost or snow)
- at night (outside temperatures drop even further at night)
- in windy conditions (high winds can amplify the effects of cold)
- in alpine regions
- in open vehicles.

Control measures for work in extreme cold

While it may not be possible to eliminate extreme cold in the outdoor environment, you can take steps to minimise the effects of working in extreme cold conditions. For example:

- replacing existing plant with plant that is designed with built-in protection against cold injuries (such as thermally-insulated handles and heated operator cabs)
- where possible, scheduling work for warmer times of the day or year

- allowing extra breaks for warming up or rotating workers more often when they are exposed to cold conditions
- encouraging self-paced work where possible
- making sure workers are acclimatised to the conditions
- avoiding putting workers with pre-existing medical conditions that may make them susceptible to cold stress in jobs where they will be exposed to extreme cold
- providing climate-controlled shelter away from wind and rain during breaks
- providing specialised protective clothing that protects from cold, wind, and water
- providing drying facilities so wet or damp clothing and PPE can be dried during breaks and between shifts
- training workers on how to identify signs and symptoms of cold-related illness in themselves and their workmates. For more information, see WorkSafe's guidance: Working safely in extreme temperatures

Provide PPE for working in extreme cold

You should provide specialised PPE, such as thermal and weather-proof clothing, that protects workers from cold, wind, and water.

Workers should wear layered clothing to maximise insulation and allow them to add or remove layers to keep comfortable when changing environments.

Clothing should be made of materials that provide good insulation and waterproofing (where required) but are still breathable.

12.4 Monitoring for extreme temperatures

If your workers are being exposed to extreme temperatures while working, you may need to get an assessment done to determine if they are at an elevated risk of developing heat- or cold-related illness or injury.

You may need to add monitoring for extreme hot or cold exposure, and signs and symptoms of heat- or cold-related illness or injury to your health monitoring programme.

For detailed information on exposure and health monitoring for extreme temperatures, see WorkSafe's guidance: Working safely in extreme temperatures

12.5 More information on extreme temperatures

- WorkSafe's Temperature at work webpage
- WorkSafe's guidance: Working safely in extreme temperatures

13.0
UV/sun exposure

IN THIS SECTION:

Exposure to ultraviolet (UV) radiation from the sun can increase the chance of road and roadside workers developing serious health conditions, such as skin cancer.

13.1 Introduction to managing UV/sun exposure risks

This section offers guidance for PCBUs on managing the risks of UV radiation exposure for road and roadside worker.

UV radiation is a type of radiation that is given off by the sun and some artificial sources (such as UVB work lights). This radiation can damage the genetic material (DNA) of skin cells, causing harm to a person.

UV radiation cannot be seen or felt, so workers may be exposed to harmful UV radiation without knowing.

UV radiation can harm a worker in several ways, including:

- skin cancer
- sunburn
- eye damage (such as cataracts).

The total amount of UV radiation that a worker may be exposed to when working outside depends on the factors described below.

FACTOR AFFECTING UV EXPOSURE	THINGS TO CONSIDER
The time of day and time of year	UV levels are highest when the sun is high (around midday) and during summertime (when the sun is higher in the sky for longer).
The weather conditions	UV levels are generally higher on a cloudless day. However, UV radiation can pass through cloud cover and reach harmful levels even on a cloudy day.
Work surfaces	Workers can be exposed to UV radiation as it reflects off surfaces such as roads and footpaths. The lighter the colour of the surface, the more UV radiation will be reflected.
Medical and chemical exposure	Certain medication and chemical exposures can also increase the chances of UV damage because they cause photosensitivity (which makes a person more sensitive to UV radiation).

TABLE 6: Factors that can affect UV exposure

All skin types can be damaged by UV rays.

13.2 Control measures for UV/sun exposure

Minimise exposure to UV radiation

As the risk of sun exposure cannot be fully eliminated, minimising exposure to UV radiation is important. Examples of how UV exposure can be minimised include:

- providing shelter where possible
- providing shade during breaks
- rotating workers on jobs where there is the most UV exposure
- avoiding uncovered outside work between the hours of 10am to 4pm, wherever practicable
- educating workers on the risks of UV exposure, for example:
  - how they can keep themselves protected
  - what warning signs of UV damage to look out for
  - what to do if they suspect sun damage.

Personal protective equipment (PPE)

As well as minimising the time workers spend exposed to UV radiation, PPE should also be provided.

PPE for UV radiation includes:

- sunscreen and lip protection
- breathable protective clothing
- protective hats
- protective eyewear or sunglasses.

When considering what PPE options are appropriate, check that the proposed PPE is not going to introduce new risks. Examples of risks include:

- workers overheating if the material is too heavy or not breathable
- PPE equipment or clothing getting caught in machinery if it is too loose
- wide brimmed hats or dark glasses limiting vision.

FIGURE 13:
Example of sun protection that can be fitted to hard hats and helmets

13.3 Monitoring for UV damage

The skin and eye health of workers should be monitored. This is a practical way to check if control measures are working.

A system that checks workers for the risks from sun exposure can include:

- encouraging workers to regularly check their own skin
- providing annual skin checks by a doctor or nurse trained in skin cancer detection. For more information, see Section 17.0: Health monitoring
- offering yearly vision checks
- encouraging workers to get an abnormal mole, freckle or spot checked by their doctor (you should consider funding this expense)
- reporting incidents of sun exposure and sunburn to a Health and Safety Representative or management.

13.4 More information on UV/sun exposure

WorkSafe's guidance: Protecting workers from solar radiation

14.0 Impairment

IN THIS SECTION:

Impairment can make road and roadside workers more likely to harm themselves and others while working.

14.1 Introduction to managing impairment risks

This section offers guidance for PCBUs on managing the risks or impairment for road and roadside workers.

A worker's fitness to work can be impaired by things like fatigue, medication, drugs, and alcohol. This can create a risk to their health and safety and the safety of those around them.

14.2 Fatigue

Road and roadside work relies on workers being physically and mentally alert.

Fatigue is a physiological state where someone is not able to mentally and physically function as they usually would. There are four main factors that can contribute to someone developing fatigue:

- missing out on sleep
- being awake for too long
- working and sleeping in the wrong parts of the body clock cycle
- having a high workload (mental and/or physical).

Fatigue is a major risk for road and roadside workers. Examples of conditions that can lead to road and roadside workers experiencing fatigue include:

- the increase in 24-hour operations
- longer shifts
- an increase in overtime hours
- on-call or night duties
- long driving times (some workers have to travel before and after their shifts – particularly, to reach remote worksites or emergency response sites)
- personal health or lifestyle factors.

As the level of fatigue experienced by a worker increases, there is a higher likelihood that the worker will experience impairment. This can affect their decision-making abilities, increasing the likelihood of negative safety or health outcomes.

Fatigue could also cause micro-sleeps, where the person briefly falls asleep. Micro-sleeps are potentially deadly if they occur at the wrong time – for example, when the person is in control of a vehicle or mobile plant.

14.3 Control measures for fatigue

There are several control measures that can be used to reduce the chances of workers experiencing fatigue, for example:

- creating work schedules that allow for sufficient rest during work shifts and between shifts (create these in consultation with your workers)
- making sure working hours are not too long. If longer working days are required, consult with your workers before deciding these hours. Consider staggered start and finish times, longer rest breaks, and periods off work
- scheduling tasks suitably throughout a work period. A person's ability to remain alert and focused can be reduced between 3.00am and 5.00am, and between 3.00pm and 5.00pm. If reasonably practicable, avoid critical jobs, such working at height, manual tasks, or tasks using mobile plant or vehicles, during these times
- monitor and place limits around the number of overtime hours that can be worked. Avoid incentives to work excessive hours
- monitoring and placing limits around shift swapping and on-call duties
- designing rosters that follow natural sleeping rhythms and allow for good sleep opportunity and recovery time
- avoiding work that starts before 6.00am, where possible. If night work is required, limit the number of night shifts in a row that your workers can work
- factoring in travel times to worksites. Long travel times to remote worksites will contribute to fatigue, as will the effects of staying away from home for days at a time
- checking that casual staff or labour hire workers have not recently worked a shift somewhere else (for example, the same day or the previous night). If they had, they might already be tired.

You can also manage the effects of fatigue by managing physical and mental work demands. For example:

- limiting periods of excessive mental or physical demands by often rotating those tasks between workers
- making sure plant, machinery, and equipment are fit for purpose
- making sure workloads are manageable. Take into account workflow changes due to factors such as machinery breakdowns, unplanned absences, or resignations
- avoiding unreasonable deadlines.

Consider seeking expert advice from a suitably qualified health and safety professional that specialises in fatigue management. They can assess your workers, schedules, systems, and practices, and provide advice on fatigue risk management.

Managing fatigue across the contracting chain

PCBUs in road and roadside work contracting chains should consider working together to create a fatigue management policy or agreement for all PCBUs in the contracting chain.

An agreement could include:

- minimum hours of sleep opportunity between shifts and at least two full nights between each week of work
- maximum shift length, considering:
  - time of day
  - type of work

- maximum travel time before and after a shift
- maximum hours to be worked in a week
- maximum hours to be worked in a month
- procedures for detecting, reporting, and addressing fatigue.

As well as the above, PCBUs should:

- provide workers with training and information on fatigue management so they can self-manage outside of work hours
- encourage open communication with workers to discuss mental health pressures. For more information, see Section 15.0: Mental wellbeing
- make sure anyone can report fatigue-related issues to management
- investigate incidents where fatigue may be involved.

Once these strategies are implemented, monitor and review them to make sure fatigue is managed effectively.

PCBUs should not create situations where there is pressure on PCBUs further down the contracting chain to meet requirements that are likely to result in fatigue or unhealthy work pressures for workers. For more information, see Section 3.0: Managing risk throughout the contracting chain

Worker responsibilities in managing fatigue

Workers must take reasonable care of their own health and safety, including managing fatigue. Workers should:

- make sure they are well and ready for work at the beginning of their shift, having done everything possible to get a good sleep and rest. Their work schedule needs to make this possible – workers need enough time between shifts to allow for quality family and recreational time, as well as rest and recovery time
- recognise the signs and symptoms of fatigue and communicate with their manager if they start showing these signs and symptoms
- report fatigue-related incidents.

For more information, see WorkSafe's guidance: Practical steps workers can take to manage fatigue

14.4 Impairment from drugs and alcohol

Medication, drugs, and alcohol use can result in impaired performance at work. This can make a worker a risk to themselves and others around them.

If workers are impaired, or may become impaired, by prescription medication, they should inform their site manager. Workers may perform work while taking prescription medication if a medical practitioner has cleared them to do so.

If a worker is impaired or suspected to be impaired by alcohol or illegal drugs, they should not be allowed to work.

Workers should be educated on the risks of working while impaired. These risks are especially high when working on or near vehicles and mobile plant, and when controlling traffic.

Drugs and alcohol policy

PCBUs should establish a drug and alcohol policy which includes strategies to deal with drugs and alcohol use or impairment during work hours. This should be done in consultation with workers and their representatives.

The drug and alcohol policy should contain at least:

- the position on the consumption of alcohol on site
- that workers must not be under the influence of illegal drugs
- what action will be taken if a worker is suspected of being impaired.

If you decide to introduce drug or alcohol testing for workers, you will need to document when and how drug or alcohol tests may be performed. Examples of tests include:

- pre-employment testing
- post-incident testing
- reasonable cause testing.

You should clearly identify safety-sensitive roles where drug testing may be applicable for managing risk.

For more information, see WorkSafe's position on impairment and testing for drugs at work

Discuss your alcohol and drug policy during induction and training. Make sure all workers understand it. Regularly remind workers of the policy during team meetings.

You should support workers who want to seek help for drug and alcohol problems.

14.5 More information on fatigue and impairment

- WorkSafe's Fatigue website page
- WorkSafe's position on impairment and testing for drugs at work

15.0
Mental wellbeing

IN THIS SECTION:

Creating mentally healthy work is the best way to prevent mental wellbeing risks for road and roadside workers.

15.1 Introduction to managing mental wellbeing risks

This section offers guidance for PCBUs on managing the mental health risks associated with road and roadside work.

PCBUs have a duty of care for their workers' mental wellbeing as well as their physical health and safety.

Mental harm may be immediate or long-term. It can come from a single event or repeated exposure. Many potential risks to worker mental wellbeing can be eliminated or minimised by PCBUs working together at the planning and design stages of road and roadside work.

15.2 Risk factors for mental harm to road and roadside workers

Causes of mental harm can be grouped into three main areas. When doing a risk assessment, consider any potential risk factors in the following areas.

How the work is designed

Examples of risk factors include:

- job demands – conflicting demands, repetitive tasks
- workload and pace - unreasonable deadlines
- work schedules - shift work, night work, working away from home
- organisational change – poor communication, lack of information about the project or job
- long periods of remote or isolated work.

Social factors at work

Examples of risk factors include:

- threats of violence or acts of violence (especially from road users affected by road or roadside work)
- bullying, harassment, poor interpersonal relationships at a worksite (this risk can increase when there are multiple PCBUs working at a site)
- lack of supervision or support, or conflicting directions (especially when there are multiple PCBUs and it is unclear who controls the worksite).

The work environment, equipment, and hazardous tasks

Examples of risk factors include:

- working in extreme environmental conditions
- having to use inadequate or faulty plant, equipment, or tools
- responding to crash or trauma situations (such as witnessing injuries and death at vehicle crash scenes).

Any of the above risk factors can affect workers physically and mentally, and can result in:

- increased stress levels
- decreased emotional wellbeing
- reduced coping strategies
- lower work performance
- impaired performance
- increased absence
- low morale
- more mistakes being made
- resignations
- self-harm
- suicide.

15.3 Control measures for mental harm

Creating a mentally healthy work environment is the best way to prevent mental harm.

As described below, there are some proactive and practical steps you can take to eliminate or reduce exposure to events or situations that may trigger stress or mental harm. These control measures will promote a mentally healthier work environment.

Consider how the work is designed

Examples of control measures include:

- managing job demands – making sure there are enough workers to cover breaks and limiting time scheduled on repetitive tasks
- managing workload and pace - making sure completion timeframes are reasonable and realistic. If timeframes prove to be unachievable, they should be renegotiated. Avoid putting pressure on workers to get the job complete in less time than it can be safely done
- managing work schedules – making sure shift design and work hours give enough time for rest and recovery between shifts. Give workers advance notice of when shift times will change. Consult with workers about work schedules where possible
- establishing role clarity - making sure all workers have a clear understanding of their role within the business, and within the contracting chain
- consulting with workers about their needs if working away from home
- providing practical support and a means for workers to stay socially connected when doing remote or isolated work.

Consider social factors at work

Examples of control measures include:

- creating a positive work environment where good relationships exist and workers are encouraged and supported. Promote workplace dignity, respect, and the upholding of one's mana
- minimising face to face contact between workers and road users where possible (for example, by using automated stop/go lights so workers cannot be abused by road users for delaying their travel)
- having policies in all contracts throughout the contracting chain that set out:
  - the PCBU's policies on stress, bullying, and violence
  - how to report instances of stress, bullying, and violence
  - the steps the PCBU will take to address stress, bullying, and violence
  - a plan on how these policies will be communicated to workers.
- having a clear escalation process for dealing with issues. Workers should know who they can raise concerns with (for example, their manager, Health and Safety Representative, or union representative)
- making sure managers are accessible and available to workers
- making sure workers are given fair and timely feedback on their performance (both positive and constructive feedback)
- considering conflict management or de-escalation training, for example for when workers are:
  - dealing with the public who may be held up by road works
  - raising issues with other contractors, subcontractors, or co-workers, or responding to issues raised by other contractors, subcontractors, or co-workers.
- where possible, being aware of personal circumstances that affect your workers and provide support as appropriate. Allow flexibility or time off where needed
- being proactive about providing worker support and normalise asking for help. See Section 15.5 *Access to worker support services* below.

Consider the work environment, equipment, and hazardous tasks

Examples of control measures include:

- rotating workers on tasks that have extreme environmental conditions
- making sure workers have all the resources they need to do the job properly and safely
- providing effective debriefs and support for workers who have responded to crashes or trauma situations (such as witnessing injuries and death at vehicle crash scenes). See Section 15.4 *Support for workers who are exposed to vehicle crashes/trauma situations* below
- consulting with workers regularly about ways that hazardous tasks can be eliminated or minimised.

15.4 Support for workers who are exposed to vehicle crashes or traumatic situations

Road and roadside work can include road crews that provide support to emergency responders at road incidents, such as vehicle crashes. The nature of this work may mean workers are exposed to traumatic situations that can cause mental harm.

Where reasonably practicable, exposure to these situations should be minimised. Ways this can be done include:

- limiting the number of people who witness the scene. Workers that are not directly involved should be kept away

- identifying the roles and responsibilities of those who will step up if a situation occurs
- developing a trauma response plan that covers these situations and how they will be handled.

Make sure there are practices in place to provide support for these workers, so they do not suffer mental harm as a result. Examples of practices include:

- training managers in mental health first aid. For example, training managers in how to debrief effectively so that workers share how they are feeling and recommend ways of seeking help
- considering the cultural needs of your workers. For example, Māori workers may wish to have the tapu lifted at the site of a fatality before feeling spiritually safe to continue work at that site
- emphasising the importance of workers looking out for each other
- promoting a work environment that encourages workers to seek help by:
  - making sure workers know where they can get extra support
  - emphasising the confidentiality of support services to make sure there is fair and easy access for all workers. See Section 15.5: *Access to worker support services* below.
- educating workers (and their families) about effective coping strategies for workers and ways they can reduce the effects of trauma on family members
- where possible, rotating workers between tasks, so they have a break from responding to these types of jobs.

Even workers that are not specifically tasked with providing support to emergency responders may find themselves responding to, or witnessing, an emergency during the course of doing their job.

PCBUs should consider including incident response training for all workers. Training should include:

- guidance on what to do in emergency or trauma situations
- how to deal with the emotional aftermath of witnessing traumatic situations
- where and how they can seek help for themselves if needed.

15.5 Access to worker support services

Support services should be available to all workers (such as employee assistance programmes).

PCBUs may need to actively facilitate access to these services. If workers are working long shifts or nights (meaning they should be resting during the day), they may find it difficult to access these services without assistance from their employer. They may be reluctant to access them during their limited personal and family time.

Where reasonably practicable, PCBUs should allow for workers to access support services during paid work time. Especially if the need for help has been triggered by work factors.

15.6 More information on worker mental health

- WorkSafe's Bullying prevention toolbox
- WorkSafe's position on supporting mentally healthy work
- WorkSafe's Work-related stress website page

16.0
Exposure monitoring

IN THIS SECTION:

Exposure monitoring can be used to measure and evaluate what your workers are being exposed to while working on a road or roadside.

16.1 Introduction to exposure monitoring

Exposure monitoring is the measurement and evaluation of exposure to a health hazard by a person at work.

This section offers guidance for PCBUs on how you can use exposure monitoring to:

- identify, assess, and confirm health risks
- identify where new control measures are needed
- monitor how well current control measures are performing
- identify when control measures need to be reviewed, updated, or removed.

Exposure monitoring is not a control measure. It does not replace the need for control measures to eliminate or minimise worker exposure to harm.

16.2 Exposure monitoring for road and roadside work

For road and roadside workers, exposure monitoring could include measuring and monitoring the following conditions in the work environment:

- The level of noise workers are being exposed to.
- The amount of asphalt fumes, chemical vapours, or other hazardous substances workers are being exposed to.
- The amount of vibration workers' arms, hands, or whole body are being exposed to.
- The amount of dust (including crystalline silica) workers are being exposed to.
- Thermal stress (heat and cold).

FIGURE 14:
Example of workers wearing personal monitoring devices

The type of monitoring depends on the kind of work you do.

You will need to talk to a suitably qualified and experienced health and safety professional who can advise what monitoring is appropriate and how often it needs to be done. You might need to carry out initial monitoring and then conduct regular (ongoing) monitoring.

All PCBUs in the contracting chain should work together to coordinate exposure monitoring activities. This may include the contracting PCBU or contractor providing support to subcontractors when planning how and who will undertake exposure monitoring.

16.3 Biological exposure monitoring

Biological exposure monitoring is another type of exposure monitoring. It usually involves taking blood or urine samples to test for a substance (or a metabolite of a substance) workers are working with.

PCBUs have consent and privacy obligations towards workers that must be followed when doing biological exposure monitoring.

For more information, see Section 17.4: Consent for health monitoring

16.4 Who can provide you with advice or carry out exposure monitoring?

Exposure monitoring should be carried out by a competent person, such as an occupational hygienist, who has the right knowledge, skills, and experience in appropriate techniques and procedures, including interpreting results.

Blood or other invasive samples should be taken by a health practitioner, such as an occupational health nurse or phlebotomist (for blood).

You can find a list of workplace health and safety professionals on the HASANZ website register: www.hasanz.org.nz or contact the New Zealand Occupational Hygiene Society: www.nzohs.org.nz

16.5 If exposure monitoring shows workers are at risk

If monitoring results show workers are being harmed or are at risk of being harmed:

- you must take immediate action to eliminate or minimise the health risks to workers
- you should alert all other PCBUs in the contracting chain who may also have workers at risk
- all PCBUs should work together to address the risk that monitoring has highlighted.

If immediate control measures cannot be put in place, work should stop until the risk can be appropriately managed.

Consider setting up health monitoring to tell you if workers are experiencing health effects from potential exposures (where relevant). For more information on health monitoring, see Section 17.0: Health monitoring

16.6 More information on exposure monitoring

WorkSafe's Health monitoring and exposure monitoring website

17.0
Health monitoring

IN THIS SECTION:

Health monitoring looks at whether a worker's health is being harmed because of what they are being exposed to while working on a road or roadside.

17.1 Introduction to health monitoring

Health monitoring looks for changes to your workers' health that may be caused by what they are being exposed to at work.

This section offers guidance for PCBUs on how you can use information from health monitoring to help confirm that control measures are working effectively to minimise your workers' exposure.

> Health monitoring is not a control measure in itself. It does not replace the need for control measures to eliminate or minimise worker exposure to harm.

Examples of road and roadside worker health monitoring include:

- carrying out hearing tests to check for hearing loss from being exposed to noise
- testing lung function to check for any loss of function from inhalation of hazardous dusts, fumes, or chemicals
- checking eyesight from being exposed to chemicals or UV radiation
- checking for skin damage from being exposed to chemicals
- skin cancer or mole screening from being exposed to UV
- checking for nerve, muscle, or circulation damage from being exposed to vibration
- checking on workers' physical health for signs of discomfort, pain, or injury to muscles, ligaments, bones, tendons, blood vessels, and nerves, associated with manual tasks
- checking on workers' mental health – looking for signs of mental harm or stress resulting from their work
- checking body temperature to look for hypothermia or hyperthermia.

Wellbeing programmes, pre-employment health screening, and fitness to work examinations are not health monitoring.

17.2 When should health monitoring be done?

The type of monitoring you should use depends on the kind of work you do. You will need to seek advice from a suitably qualified and experienced health and safety professional to see if monitoring is appropriate for you, and if so, what type and how often.

If relevant, you should carry out baseline monitoring at the beginning of a worker's employment (to get baseline readings). Then regular (ongoing) monitoring should be carried out.

17.3 Who can carry out health monitoring?

Health monitoring should be carried out by suitably qualified, trained and experienced health practitioners with the knowledge, skills, training and experience to carry out the monitoring you need.

For example, an occupational health nurse could carry out initial health assessment (health screening) and subsequent routine regular testing.

If health issues are suspected, workers should be sent to a health practitioner who understands occupational health for a full medical assessment and formal diagnosis, and feedback to the PCBU. This could be an occupational physician or general practitioner (GP) with relevant experience.

For occupational health practitioners you could look here:

- New Zealand Occupational Health Nurses' Association
- The HASANZ Register of verified workplace health and safety professionals
- The Australian and New Zealand Society of Occupational Medicine Incorporated

17.4 Consent for health monitoring

Workers must give their written informed consent for biological exposure monitoring or health monitoring. This is a requirement of the Code of Health and Disability Services Consumers' Rights.

The Code of Health and Disability Services Consumers' Rights

Under the Code, workers have the right to:

- be fully informed
- make an informed choice and give informed consent.

Being 'fully informed' means workers must:

- be given information about the health risks and/or consequences of the work
- be given information about the proposed biological exposure monitoring or health monitoring, and
- be told this information in a way they can understand.

Workers must be given the information that they would reasonably expect to receive, for example:

- what options they have
- what the risks are
- what side effects and benefits of those options are
- who will carry out the monitoring
- who will have access to the results
- how the results will be stored.

It is then up to workers to decide – they can say 'no' or change their mind at any time.

For further information:

The Code of Health and Disability Services Consumer Rights

Health monitoring cannot go ahead until the worker gives informed consent.

You should work together with any worker who is reluctant to take part in health monitoring to address their concerns. However, if the worker still does not want to comply, consider what alternative steps you could take to manage their health risks. For example, could the worker do different work that does not require monitoring?

A worker refusing to participate in monitoring does not excuse you of the responsibility to manage the risk in other ways. You could include health monitoring participation into employment agreements or contracts so workers will know about these requirements up-front before they take the job.

17.5 Worker privacy and health monitoring

Any personal information collected during health monitoring must be kept secure and confidential.

You must comply with the Privacy Act 2020 if you are collecting, storing, using, or disclosing personal information (this is information about an identifiable person).

Any personal information must be stored securely, and access should be restricted to authorised people only.

17.6 Sharing monitoring results

Take care when sharing monitoring results. If the monitoring results contain personal information, you must comply with the requirements set out in the Privacy Act 2020 for disclosing personal information.

Workers should be offered copies of their own monitoring results. PCBUs should also report back to all workers about how well they are managing all health risks.

WorkSafe can also ask for monitoring results.

17.7 Only use monitoring results to manage health risks

Under the Privacy Act, you can generally only use personal information for the purpose it was collected.

There is more information on this (and some specific exceptions) on the Privacy Commissioner's website here: privacy.org.nz

The use of health monitoring results must comply with the Privacy Act.

17.8 If monitoring results shows a worker is at risk

The PCBU must take immediate action to eliminate or minimise the health risks to the worker.

- You should urgently review and revise your control measures with help from a suitably qualified and experienced health and safety professional.
- If immediate control measures cannot be put in place, work should stop until the environment is safe again.

- Depending on the monitoring results, you could be advised to send your worker to a suitably qualified and experienced occupational health practitioner (for example, occupational nurse or occupational physician) for a medical assessment.
- The workers' PCBU should alert all other PCBUs in the contracting chain who may also have workers at risk (without compromising the privacy of the affected worker).

17.9 More information on health monitoring

- WorkSafe's Health monitoring and exposure monitoring
- The Privacy Act 2020
- The Office of the Privacy Commissioner

PART C

Managing safety risks for road and roadside workers

IN THIS PART:

18.0 Introduction to managing safety for road and roadside workers

IN THIS SECTION:

Road and roadside workers can be exposed to many risks to their physical safety that could cause serious injury or death.

18.1 Things to know when reading Part C – Managing safety risks for road and roadside workers

Sections 18 to 23 cover common safety risks to road and roadside workers and provide examples of ways to eliminate or minimise these risks in the road/roadside work context.

Not all examples will be appropriate to all situations. The relevance of examples provided will depend on:

- the scale, scope, and nature of the work being done, and
- how any given control measure may interact with other work processes or practices (any new risks created by a control measure must also be managed and not be allowed to transfer elsewhere).

It is up to you, the person conducting a business or undertaking (PCBU), to assess your individual circumstances and determine which control measures are appropriate and reasonably practicable for your situation. For more information, see Section 2.0: Risk management

Examples of risks and control measures provided here will not cover all possibilities

There may be other safety-related risks not mentioned that you will need to identify and manage. You can apply control measures that are not suggested in these guidelines, provided you are satisfied that they provide equal or better protection.

18.2 Eliminate safety risks at the planning and design stage

Where reasonably practicable, potential risks to worker safety should be eliminated at the planning and design stage of the work. For example:

- planning for various works or maintenance to be done during regular scheduled road closures (especially for significant roads)
- choosing the safest work practices and methodologies (even if these may take longer)
- locating underground services before designing the work so designers can, where possible, avoid planning excavation near underground services
- designing work site layouts so that:
  - there is enough room for mobile plant to move around safely
  - site entry and exits points have good visibility for workers, motorised road users, and vulnerable road users
- designing infrastructure items that require minimal maintenance or can be safely accessed when maintenance is needed after installation. Examples include:
  - planting slow-growing or low maintenance roadside vegetation that will require less frequent pruning
  - ensuring safe future access for signage and roadside cabinets. Avoid placing them where they may require height access equipment to reach.

19.0 Working near live traffic

IN THIS SECTION:

Working near live traffic presents significant safety risks for road and roadside workers, and road users.

19.1 Introduction to managing the risks of working near live traffic

This section offers guidance for PCBUs on managing the risks associated with working near live traffic. In this section, 'live traffic' includes motorised road users and vulnerable road users such as cyclists and pedestrians (including when using footpaths or other accessways).

Whenever an activity changes the way a road normally operates, a risk is created for both workers and road users. Under the Health and Safety at Work Act 2015 (HSWA), road users are considered as 'other persons'. In this section in particular, consideration needs to be given to managing the risk created by:

- road users towards workers, and
- the risks created by the work/workers towards road users.

FIGURE 15:
Risk relationship between worker/work activity and road users

Working near live traffic will usually require some form of temporary traffic management (TTM) to be in place. Where there is a TTM set-up in place (also known as a TTM zone), the worksite will typically be within this zone.

Use the hierarchy of control measures when deciding how to manage risks of working near live traffic and when planning for TTM. For more information on the hierarchy of controls, see Section 2.0: Risk management

For guidelines regarding managing the risks of vehicles and mobile plant operating within a worksite, see Section 20.0: Working with or near mobile plant

Note: The traffic management examples listed in this section **do not describe all the options available**. They are provided to help the reader understand how to apply a risk management approach when managing the risks associated with working near live traffic. This section should not be used as the sole resource when planning for TTM.

The *New Zealand Guide to Temporary Traffic Management*

WorkSafe recommends you read this section in conjunction with Waka Kotahi's New Zealand Guide to Temporary Traffic Management (NZGTTM) which provides more detailed guidelines for temporary traffic management planning, documentation, implementation and review.

If the work is being done on a state highway, Waka Kotahi will usually require you to follow the NZGTTM

If the work is being done on a local road, you should consult with the relevant local road controlling authority (RCA) about their requirements. They may also refer to the NZGTTM

19.2 What could go wrong working near live traffic?

Examples of traffic-related hazards at road or roadside worksites include:

- moving vehicles travelling close to the worksite and workers
- road users driving too fast for the conditions
- road users that are distracted, fatigued, or impaired
- road users that are confused by a new or temporary road layout
- impatient road users attempting to avoid traffic management constraints by travelling on footpaths, road shoulders, or opposing lanes
- workers creating a hazard for road users by the way the work is being done.

Examples of what can go wrong while working near live traffic include:

- workers entering live traffic lanes and being hit by moving vehicles
- workers being hit by flying debris from passing vehicles
- drivers in vehicles entering the worksite and hitting/injuring workers or injuring themselves
- pedestrians and cyclists entering worksites or live traffic lanes, and crashing into workers, mobile plant, or vehicles – injuring workers or themselves.

19.3 Things to think about when assessing the risk of working near live traffic

Examples of things to look out for and consider include:

FACTORS	EXAMPLES OF CONSIDERATIONS
Speed of traffic (operating speed)	Consider both the speed limit in the area and the actual speeds the vehicles are going. For example: – Do road users frequently drive over the posted speed limit?
Type of traffic	Consider the range of road users that will be affected, and the affect that they may have. For example: – does the location get a lot of vulnerable road users such as pedestrians and cyclists in addition to motor vehicles? – will a footpath, cycleway, or other type of accessway be impacted? – does the road have a lot of heavy vehicles passing through?
Visibility	Consider if the location of the worksite has any factors that could limit road user visibility when approaching the worksite. For example: – is the location prone to sunstrike or fog? – is there vegetation close to the road edge? – is the location near a sharp bend or corner? – are there parked vehicles?

FACTORS	EXAMPLES OF CONSIDERATIONS
Complexity	Are there aspects of the location that already require road users to be more focused? For example: – is the worksite near a busy intersection? – is the location near a railway level crossing? For more information, see Section 23: Working near the rail corridor
Other activities	What other activities or places in the area could affect driver or pedestrian behaviour? For example: – schools – sporting events – public transport hubs.

TABLE 7: Factors to consider when assessing the risk of working near live traffic

19.4 Eliminate or minimise the risks from working near live traffic – close the road

Often a good way to eliminate or minimise the risks of working near live traffic is to close the road while the work is being done. This should be the preferred option where it is reasonably practicable to do so.

Typically, the decision to close a road will need to be agreed upon by all parties – specifically the RCA and the contractor. When deciding if closing the road is a reasonably practical step to take, consider what alternative options may be available ensure safety and minimise disruption to road users. For example, consider:

- if there are suitable alternative routes that road users can take to **safely** bypass the road closure (this includes vulnerable road users such as pedestrians and cyclists)
- if it would be possible to publicise the road closure ahead of time, allowing road users to plan ahead, or consider alternative routes or travel times
- if the work can be completed at a time when the road is less busy, therefore requiring less disruption to road users – for example, close the road at night to complete the works (assuming the works can be done safely in night-time conditions)
- if the work can be done over several days with intermittent road closures or one-way detours.

When considering the available options for closing the road, you also need to assess what, if any, new risks may be created, increased, or transferred by doing so. For example, consider:

- if the road closure would result in new or increased risk to road users
- if the road closure would result in new or increased risk to workers while setting up and maintaining the closure
- if the road closure would result in new or increased risk to vulnerable road users such as pedestrians or cyclists.

You will need to assess whether any new risks outweigh the benefits of closing the road. In addition to consulting with workers and other affected PCBUs in the contracting chain, you may also need to consult with affected parties such as road user organisations or vulnerable road user groups.

Often, closing the road can be more cost effective. Closing the road usually means work can be completed with less interruption. Not only may it be safer for workers, but work may be completed faster and with less cost.

See the *Supporting Material* section of the NZGTTM for road closure examples and case studies showing how the risks to workers were balanced against the risks to road users.

The **convenience** of road users should not be prioritised over the **safety** of road or roadside workers.

19.5 Further ways to minimise the risks from working near live traffic

If it is not reasonably practicable to close the road entirely while work is being done, you will need to plan how you will minimise the risk to workers and others and allow for road users to safely pass the worksite.

Short duration activities

All reasonably practicable risk management options should be considered no matter how long the work is expected to take. This will also include weighing up the risks of implementing certain control measures against the risks of the activity itself.

Where possible, convert short duration foot activities to vehicle-based activities (for example, use a truck-mounted object retrieval system to collect debris off a highway or motorway).

The length of time a worker will be on the road or roadside completing a task should not alone determine if or what control measures are used.

Isolate workers from road users

Where reasonably practicable, you should try to physically isolate the work activity and workers from road users. Examples of how this can be done include:

- using temporary road safety barriers
- using truck-mounted attenuators (especially for mobile works)
- installing safety fences (this would be appropriate when isolating workers from pedestrians and non-motorised road users).

For breakdown assist situations, both vehicles should be positioned as far off to the side of the road as possible. Tools and equipment should be accessible from the side of the response vehicle facing away from moving traffic.

For kerbside rubbish and recycling collection, workers should only operate from the side of the vehicle facing away from moving traffic.

Control the movements of road users

You could minimise the risks presented by road users by creating a TTM zone that lets road users pass the worksite in a controlled way. Examples of how this can be done include:

- lowering the speed limit
- using piloted convoys
- using automated stop/go systems to allow single direction traffic though the TTM zone at a time
- setting out temporary lanes in a way that causes road users to slow down
- installing temporary speed feedback signs
- diverting footpaths or cycleways away from the worksite.

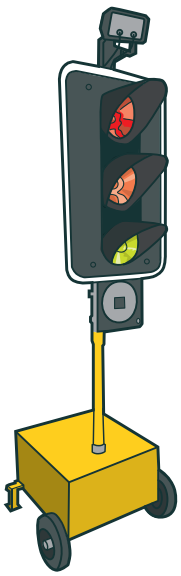

FIGURE 16:
Example of automated stop/go signals

Use signage and other administrative control measures

You should also consider what administrative control measures you can put in place. Examples include:

- setting up exclusion zones to separate workers within the worksite from road users travelling through the TTM zone
- putting up warning signs for road users (make sure these are not blocking footpaths or cycleways)
- requesting police support for speed enforcement
- using road cones to keep road users within their lanes and narrow the lane to encourage them to slow down
- informing the public as soon as possible about upcoming work and what changes and disruption they may encounter.

19.6 Traffic management plans (TMPs)

This section provides a general overview of TMPs. You should also refer to guidance provided by the RCA for more detailed information on TMPs.

Documenting a TMP

A TMP is a document that describes the design, implementation, maintenance, and removal of traffic management while work is being done on or near a road. A TMP will also typically document the roles and responsibilities of all involved.

TMPs should be created by a suitably qualified temporary traffic management planner (TTMP).

When creating these plans the TTMP should:

- follow the findings and recommendations of the risk assessment that has already been done in accordance with HSWA (as outlined in these guidelines) and any additional guidance provided by the RCA
- make sure all equipment to be used is consistent with the specifications listed in the NZGTTM
- where reasonably practicable, consult with all PCBUs and their workers that will be implementing the TMP and/or working within the TTM zone while the TMP is in place
- where reasonably practicable, consult will all road user stakeholder groups that will be affected by the TMP
- consider their upstream duties as a designer. For more information on upstream duties, see Appendix 5: Upstream duties

Refer to any additional guidance provided by the RCA for a more detailed list of what should be included in TMP documentation.

Checking a TMP (TMP peer review)

Before being implemented, TMPs should be checked to make sure that:

- the plan does not clash with other planned work
- the plan does not cause unintended negative impacts
- the plan has correctly identified and assessed risk, and determined the most appropriate control measures – ensuring the lowest total risk to all affected people.

Refer to any additional guidance provided by the RCA on the steps involved in TMP peer review and who should do the peer reviews.

Implementing a TMP

Implementing a TMP on site is usually led by a suitably qualified site traffic management specialist (STMS) and supported by suitably qualified traffic controllers (TCs).

Where there is a separate traffic management provider (contractor or subcontractor) providing traffic management for a worksite – all PCBUs on site should work together and follow the advice of the STMS in relation to TTM matters.

Work should not begin at the worksite until the STMS has confirmed that the TTM zone is ready, and the workers have been briefed.

No one should interfere with or make changes to the TTM zone set-up without having the approval of the STMS first. Workers should notify the STMS if they see any issues with the set-up (see *Monitoring/reviewing a TMP* below).

Monitoring and reviewing a TMP

An important step in effective risk management is monitoring and reviewing control measures. For TMPs, this may involve checking the following:

- Is the TMP is still relevant for the conditions. For example:
  - are the traffic volumes as planned for?
  - is the weather as planned for?
  - is the work activity as planned for?
  - have any other conditions changed that mean the TMP is no longer appropriate?
- Are there any new risks that were not planned for?
  - If new risks have emerged that were not planned for, the TMP should be updated as soon as reasonably practicable to account for the new risks, see *Changing a TMP* below.
- Assuming the TMP is still relevant for the conditions, has the site been delivered or set up correctly according to the TMP?

Changing a TMP

Sometimes a TMP will need to be changed to accommodate changing conditions, unanticipated risks, or because of a formal review. Changes need to be documented (including the reasons for the change). Where applicable, changes should be communicated to:

- the TTMP
- the STMS or TC working to the plan
- the RCA
- other PCBUs in the contracting chain involved with the work (using already established communication channels).

Refer to any additional guidance provided by the RCA for more detailed information on changing TMPs.

Note: There may be other parties that need to be contacted if changes to TMPs are required. Examples include rail corridor operators, public transport system operators, or airport operators.

19.7 Emergency response traffic management

It may not be possible, or reasonably practicable, for first responders attending emergency situations to conduct a full risk assessment and make a detailed TMP.

First responders will still need to take reasonable steps to prevent further harm to road users or workers while responding to the event.

For more guidance on how to manage traffic risks while responding to emergencies, see the *System Management* section of the NZGTTM

19.8 More information on traffic management

- Waka Kotahi's New Zealand Guide to Temporary Traffic Management (NZGTTM)
- Austroads' Guide to Temporary Traffic Management

20.0 Working with or near mobile plant

IN THIS SECTION:

Mobile plant has the potential to cause serious injury or death to road and roadside workers.

20.1 Introduction to managing the risks of working near mobile plant

This section offers guidance for PCBUs on how to manage the risks associated with working with or near mobile plant (including vehicles) within a road or roadside worksite. For guidelines regarding managing the risks from public road users, see Section 19.0: Working near live traffic

The scale of site traffic management controls will vary depending on:

- the size of the site
- the mobile plant in use
- the complexity of the works being undertaken.

In this section, 'mobile plant' also includes onsite work vehicles such as company cars, trucks, and utility vehicles.

20.2 What could go wrong when working near mobile plant?

Mobile plant used in road and roadside work can cause serious injury or death by rolling over, or by striking or colliding with workers, vehicles, or plant. Common hazards include:

- people and mobile plant sharing the worksite
- uncontrolled movement to, from, and within the worksite
- multiple vehicles or mobile plant operating at the same time in a confined area
- mobile plant operating on uneven surfaces or potentially unstable ground
- mobile plant malfunctioning or breaking down
- people using mobile plant in an unsafe manner (such as exceeding safe speeds or exceeding load limits).

Note: Aspects of how mobile plant is used or operated by workers may also cause risks to workers' health. For more information, see the following sections:

- 6.0: Noise
- 7.0: Manual tasks
- 8.0: Vibration
- 9.0: Airborne contaminants

20.3 Minimise the risks from working near mobile plant

Keep people and mobile plant separated

Wherever mobile plant is operating, there is a risk to workers or others who are nearby.

As it is not usually practicable to eliminate the use of mobile plant, the preferred control measure is to isolate workers or others from mobile plant while it is in operation.

Examples of how this could be done include:

- creating an exclusion zone around mobile plant while in operation, so that only those directly involved with the operation of the mobile plant are permitted within the exclusion zone
- using temporary pedestrian barriers or fencing, supported by signage, to indicate exclusion zones
- making sure vulnerable road users such as pedestrians and cyclists have a safe way to get past the worksite, in particular past site entry and exit points.

Where relevant, keep worker and visitor parking clearly separated from the work area. Avoid having small vehicles parked alongside, in front, or behind larger vehicles.

For information on managing the risks associated with working from vehicles and mobile plant while they are moving, see Section 21.0: Working from moving vehicles

Control the speed of mobile plant on site

This can be done by:

- setting worksite-specific speed limits for mobile plant operating within the worksite
- using speed control measures such as temporary speed humps. But you need to make sure they are not going to create new risks such as vehicle instability
- installing speed-limiting devices in mobile plant (which can be activated when a worker is detected nearby).

Use safe reversing and turning practices

Eliminate the need for reversing or turning by:

- using multi-directional mobile plant or mobile plant with rotating cabins
- having a one-way drive-through loading and unloading system (where applicable)
- having designated turning areas that are separated from workers and other work activities.

Vehicles with dual steering wheels should avoid doing U-turns when being operated from the left side.

Where these control measures are not reasonably practicable, you should consider:

- using devices like reversing sensors, reversing cameras, mirrors, rotating lights, or audible reversing alarms (make sure these are always kept clean and in working order)
- using a competent person to guide the reversing mobile plant (see *Guiding reversing plant* below)
- using radios and other communication systems

- providing a designated area that is:
  - clearly marked
  - signposted
  - well-lit
  - has barriers around it to stop workers from entering the area.

For more detailed guidance, see WorkSafe's quick guide: Safe reversing and spotting practices

Guiding reversing plant (spotting)

The job of a spotter is to:

- guide drivers or operators when reversing
- make sure reversing areas are free of people.

If you use a spotter, make sure:

- you are managing the risks of having a person near mobile plant while in operation:
  - the spotter should always be in visible contact with the driver or operator, and wear high-visibility clothing
  - the spotter should stand in a safe position throughout the reversing operation
- the spotter and driver or operator both understand and confirm the standard spotting signs to be used. For more information, see WorkSafe's quick guide: Safe reversing and spotting practices

Consider if radio communication between the spotter and driver would be appropriate.

For more detailed guidance, see WorkSafe's quick guide: Safe reversing and spotting practices.

Use the right mobile plant for the job

Mobile plant used at worksites should be suitable for the purpose for which they are used. Using mobile plant for a task that it is not suited for can create risks for the driver and other people at the worksite.

When choosing the right mobile plant for a job, consider:

- what the mobile plant will be doing
- if the mobile plant is designed for the purpose you want to use it for
- if the mobile plant can handle the required weight and type of load that you want it to carry
- if the mobile plant is suitable for the surface it will be operating on
- if the mobile plant could be at risk from rolling over
- if the worker operating the mobile plant is trained and competent enough to use it safely for that task
- if the mobile plant is currently certified and warranted. All mobile plant must meet relevant standards and have required registrations.

If you hire mobile plant, the hire company must provide the operating manual and instructions on how to use the mobile plant correctly and safely. This includes any weight information or noise ratings (so you can make sure workers have the correct PPE for working with that mobile plant).

For more information on upstream duties for suppliers of plant, substances, or structures, see Appendix 5: Upstream duties

Increase driver visibility

Drivers or operators should have good visibility when operating mobile plant. Choose mobile plant that has the best possible visibility and up-to-date safety features.

Consider adding features to mobile plant to eliminate blind spots and help drivers or operators to navigate safely when visibility is limited.

For example, you could add:

- reversing cameras with lines to indicate distance
- pedestrian sensors such as radar or ultrasonic sensors
- extra mirrors
- other technology (see *Collision avoidance technology and proximity warning devices* below).

Check that any changes do not compromise the integrity of the operator protective structure (OPS), if present. You may need to have the OPS re-certified if additions or alterations are made.

Make sure everyone is aware when mobile plant is operating

You should consider adding the following features to mobile plant (if they are not already present) to help workers notice and avoid mobile plant while in operation:

- lights
- reflectors
- flashing or rotating beacons
- broadband reversing alarms (also known as quackers) or tonal reversing alarms
- a horn
- other technology (see *Collision avoidance technology and proximity warning devices* below).

Collision avoidance technology and proximity warning devices

Technological safety control measures can also contribute to making a worksite safer for workers, road users, and others passing near worksites. For example:

- mobile plant proximity warning devices
- personal proximity warning devices (these can be particularly useful if workers have to wear hearing protection that affects their ability to hear nearby mobile plant)
- laser projected proximity lines showing workers how far away they should be from the mobile plant when it is moving. These can be particularly useful for night work.

Some proximity warning systems can automatically limit the mobile plant's speed when certain conditions are detected (such as proximity to people or other mobile plant).

Some technological safety control measures can monitor and provide data on the mobile plant's movements, including near misses. This data could be used when reviewing control measures and identifying high-risk areas or operators.

Seatbelts

Operators of mobile plant should always use seatbelts unless there is a specific exception allowed, such as when operating a low entry vehicle, see Section 21.0: Working from moving vehicles

Seatbelts are essential during roll-overs. Seatbelts keep the worker inside the protective structure, preventing them from being thrown from the mobile plant and potentially crushed.

For more information on seatbelt use on mobile plant, see WorkSafe's guidance: Seatbelts – a guide for businesses

Keep mobile plant well maintained

All mobile plant should be kept in good working order. Mobile plant should be maintained according to manufacturer recommendations and time or mileage guidelines. Mobile plant used in extreme conditions may need to be checked more often.

Operators should visually check their mobile plant at the beginning of every shift before using it. Provide operators with a checklist to guide them on what to look for. When using a checklist, you should:

- make sure operators have enough time to complete their mobile plant check
- keep the checklist as simple as possible
- include a system for reporting problems and making sure they are dealt with and closed off.
    - Make sure mobile plant that fails a safety critical check is taken out of service and not allowed to be used until the problem is fixed (see Figure 21). For more information, see WorkSafe's webpage: Keeping workers safe with machine lockouts
- include a section for workers to add comments or identify any other issues.

It is ultimately the responsibility of the PCBU in control of the plant, not the worker, to make sure mobile plant is in good working order. You should monitor mobile plant checklists to make sure the checks are carried out properly and that identified issues are dealt with.

Poorly maintained mobile plant can also create health risks for operators, such as whole-body vibration from poor suspension or fumes exposure from clogged up vents.

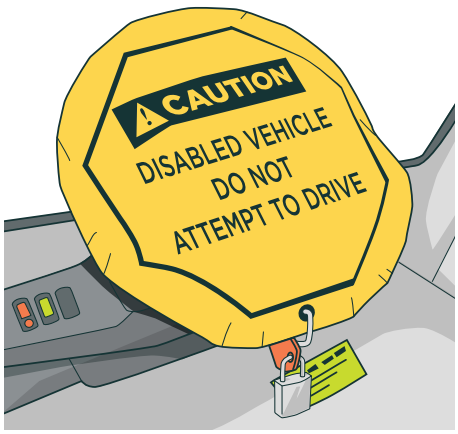

FIGURE 17:
Example of mobile plant that cannot be used until it has been fixed

Safe operators

Worksite mobile plant should only be operated by workers who are competent in the safe use of that mobile plant.

Workers should have the relevant skills, experience, and certifications for the specific mobile plant and worksite conditions they are operating in.

A competent operator is someone that:

- has had training and supervision on the operation of the mobile plant. This includes:
  - the practical mechanics of operating the mobile plant
  - how to operate it in a safe way based on the environmental conditions.
- has the required licences and certifications to safely operate the mobile plant. For more information, see Section 28.0: Training, certifications, and competency
- has the level of fitness and general abilities required to operate the mobile plant
- is well enough on the day to operate the mobile plant safely, for example:
  - not suffering from fatigue. For more information, see Section: 14.2 Fatigue
  - not under the influence of medication or another substance that could impair their ability. For more information, see Section 14.4 Impairment from drugs and alcohol

It is particularly important that new or less experienced drivers are closely monitored following their training to make sure they are operating the mobile plant safely.

20.4 Worksite vehicle movement plans

Worksite vehicle movement plans help communicate in greater detail how worksite traffic risks will be managed.

Complex worksites that have frequent onsite vehicle movements or multiple PCBUs operating on site should have a vehicle movement plan.

A vehicle movement plan should include:

- a diagram of the site layout
- details of known hazard areas for mobile plant, such as:
  - overhead electric lines
  - site entry and exit points
  - high traffic areas
  - rail corridors
  - unstable ground, steep slopes, bodies of water
- site speed limits
- the roles and responsibilities of workers managing traffic within the worksite
- the roles and responsibilities of workers who work in or near mobile plant at the worksite
- emergency procedures
- any restrictions or considerations due to other regulatory requirements (such as noise restrictions)
- details of how the plan works alongside any temporary traffic management plan that may also be in place.

Workers should be familiar with the vehicle movement plan. The plan should be included as part of their overall induction, in daily pre-work briefings whenever changes have been made, and during any refresher training.

Vehicle movement plans should be regularly monitored and reviewed by all workers and PCBUs in the contracting chain to make sure the plan remains effective and takes into consideration any changes at the worksite. Plans should always be reviewed after an incident (including near misses).

All changes to a vehicle movement plan should be communicated to workers as soon as possible.

20.5 More information on working near mobile plant

- WorkSafe's guidance: Managing work site traffic
- WorkSafe's guidance: Safe reversing and spotting practices
- WorkSafe's guidance: Seatbelts – a guide for businesses
- WorkSafe's guidance: Keeping workers safe when servicing machinery

21.0 Working from moving vehicles

IN THIS SECTION:

Working from a moving vehicle can expose road and roadside workers to risks such as falling from the vehicle or getting struck.

21.1 Introduction to managing the risks of working from moving vehicles

This section offers guidance for PCBUs on how to manage the risks associated with working from moving vehicles. This may be while operating in or beside live traffic lanes, or within a controlled road or roadside worksite.

Examples of where a worker may need to work from a moving vehicle include:

- setting up or removing temporary traffic cones and signs on a road
- installing pavement marking systems
- collecting waste and recycling (standing in an open foot well, or runners standing on the rear or sides of waste or recycling collection vehicles)
- carrying out road or roadside inspections
- roadside spraying.

This section gives advice on how to eliminate or minimise the risks associated with working from moving vehicles. It covers situations where workers are working in any location on a vehicle other than when seated in the cab with their seatbelt on.

21.2 What could go wrong when working from a moving vehicle?

Workers can be harmed by:

- falling from the vehicle
- being hit by other vehicles or mobile plant
- being run over by the vehicle (including when reversing)
- being thrown from the vehicle if it moves, turns, or stops suddenly without warning
- falling against or being struck by objects on the vehicle deck.

Note: Aspects of how mobile plant is used or operated by workers may also cause risks to workers' health. For more information, see the following sections:

- 6.0: Noise
- 7.0: Manual tasks
- 8.0: Vibration
- 9.0: Airborne contaminants

21.3 Eliminate the need for workers to work from moving vehicles

Where reasonably practicable, alternative methods should be used that do not require workers to work from a moving vehicle. For example:

- using fully automated cone deployment systems
- using automated temporary road safety barrier placement
- using automated road debris collection
- closing the road and completing the activity in a static site rather than as a mobile activity (for example, line marking).

21.4 Minimise the risks to workers while working from moving vehicles

Where eliminating the need for workers to work from a moving vehicle is not reasonably practicable, consider what control measures can be used to minimise the risks.

Examples of control measures include:

- limiting the time workers are on the outside of the vehicle. When setting out TTM gear, workers should only be positioned on the outside the vehicle during active work. They should travel in the vehicle cab at all other times, including when looping back or repositioning the vehicle
- making sure the vehicle is stationary (and the hand brake is applied) before workers attempt to get on or off the vehicle
- making sure workers on the vehicle can communicate with the driver at all times. This should be checked before work starts
- making sure the vehicle is operating at a slow speed and in the same direction as other traffic (if in or near a live lane)
- only allowing outside-of-the-cab work on vehicles specifically designed for that purpose (for example, vehicles that have foot wells with barriers and certified anchor points for securing worker restraint equipment)
- making sure workers are safely attached to the vehicle using an approved worker restraint system, where relevant
- making sure low entry vehicles (LEVs), such as those used for waste and recycling collection, have:
  - a well maintained non-slip standing surface
  - at least three points of contact for the driver while operating the vehicle
  - a barrier across the doorway while the vehicle is in motion
  - a speed limiter, limiting the vehicle to a safe speed while being operated from the left-hand side.

Using a worker restraint system on moving vehicles

Where relevant, workers should use an approved restraint system that will prevent them from being able to fall from the vehicle.

The vehicle should be equipped with:

- anchor points for securing worker restraint equipment
- a solid or soft barrier across the foot well
- a lanyard system to attach to anchor points
- a harness system to be worn by the worker.

All components should be installed, certified, used, and maintained in accordance with the appropriate standards.

Consider installing a system where the driver is automatically notified if the worker becomes detached from the vehicle while it is moving.

Train workers in how to work safely from moving vehicles

Before working from a moving vehicle, train workers in how to do so safely and know how to correctly use the fall protection system where applicable. For example, they will need to be trained in:

- when it is safe to work from the moving vehicle (and when they should ride in the cab)
- how to check the harness, lanyards, and anchor points to make sure they are safe for use
- how to fit the harness correctly
- how to correctly connect the harness to the lanyard and the lanyard to anchor points (including making sure adjustable lanyards are the correct length to prevent falls from the vehicle)
- what to do if they do fall from the vehicle while it is moving
- the correct methods for communicating with the driver.

21.5 More information on working from moving vehicles

WorkSafe's Working at height webpage (this includes useful guidance for harnessing and anchor points)

22.0 Working near utilities and services

IN THIS SECTION:

Steps should be taken to identify and avoid striking above and below ground services and utilities.

22.1 Introduction to managing the risks of working near utilities and services

This section offers guidance for PCBUs on how to keep road and roadside workers safe when working near utilities and services located near or within the road reserve. It does not cover safe work practices for work being done specifically on utilities and services.

Utilities and services are often located within or under the road reserve:

- underground facilities and services can include:
  - electricity
  - gas
  - water, wastewater, and storm water (three waters)
  - telecommunications
  - fuel
- aboveground facilities and services can include:
  - electricity
  - telecommunications.

22.2 What could go wrong when working near utilities or services?

Workers could strike a utility or service unintentionally. This can cause serious harm to workers and damage infrastructure.

The main risks which may arise from work near underground utilities and services arise from:

Striking electricity cables

Contact with underground or aboveground cables can cause severe injury (burns) and death to workers.

Damaging gas pipes

Damage to gas pipes can lead to fires or explosions if an ignition source is present. There are two main types of damage:

- pipe damage which causes an immediate escape of gas
- pipe damage that causes gas to escape sometime later. For example:
  - damage to a pipe wrapping may eventually lead to corrosion
  - poor reinstatement or backfilling may leave a pipe inadequately supported, putting it at risk of later damage.

The effects of damage to petrol services or oil pipelines are similar to those for gas pipelines. However, there are also significant environmental risks, particularly near waterways.

Damaging water, waste, and storm water pipes

Damage to water and wastewater pipes (especially high-pressure pipes) can injure workers, and cause contamination and health risks for workers.

Leaks from damaged underground pipes can wash away subsoil. It can also damage or reduce the support for nearby services, roads, structures, flood trenches and low-lying work areas.

Damaging telecommunication cables

Damage to fibre-optic cabling can expose workers to Class 3B lasers. Exposure to these beams can be particularly harmful to the eyes and skin.

Damage to telecommunication cables can also create an indirect risk to others by cutting off communication and access to emergency services for nearby residents or businesses.

22.3 Control measures for working near underground utilities and services

Locate underground utilities and services before work begins – plans and mark-outs

Before any work begins, especially where breaking ground is involved, identify all possible underground utilities and services. This includes confirming the locations of services and utilities that connect into private properties under footpaths and driveways, where relevant.

An initial assessment of the location of services should be done at the design stage of a project. This will allow those planning the work to:

- allow sufficient time and resources for workers to be able to identify services safety before any other work begins
- allow for the additional time it might take to work around those services.

You can start with plans provided by the local council or utility providers to give an indication of where underground utilities and services may be located.

You can also look for aboveground indications that there may be utilities or services below. Examples of indications include:

- the presence of streetlights
- illuminated traffic signs
- valve pit covers
- manholes
- telecommunications pit covers
- telecommunications chambers and service pillars
- obvious signs of previous trench reinstatement.

Do not rely on plans and observations alone. Plans are usually only indicative of a utility or services' location, and not all underground utilities or services will have aboveground indicators of their presence.

You will need to get a suitably qualified and competent person to locate and mark-out the locations of underground utilities or services using ground penetrating radar (GPR), hydrovac, or other relevant technology.

Marking should indicate the type of utility or service, the direction the utility or service is travelling in, and the depth of the utility or service. Where possible, have the person who did the initial locating of the services return to supervise when it is time to break ground.

Notify utility or service owners

Once you have an indication of what underground utilities or services are in the area where work is planned, notify the relevant utility or service owner.

The owner may:

- have to isolate the utility or service (this may mean a shutdown for consumers also)
- require you to apply for a permit before work begins
- want to supervise the work (such as digging or backfilling) using a standover (someone from the utility or service provider who supervises the work to make sure the services are not damaged).

Confirm with the utility service owner their preferred technique for uncovering the underground service – they may have varying rules for how close you can use certain tools or machinery.

Where there are multiple services being uncovered at the same location, use the most conservative technique.

Take caution when working near underground utilities or services

Even when best attempts have been made to find the precise locations of underground utilities or services, caution should be taken at all times.

There can often be several utilities or services grouped together (including decommissioned lines) that may not have been distinguishable during initial investigations and mark-outs.

Safe ground-breaking/digging practices should be used by:

- following the utility provider's preferred technique for uncovering the service (if known)
- avoiding throwing or spiking the ground in case a utility or service is penetrated
- considering using a spotter to keep an eye out for signs of services or utilities
- using non-conductive tools, where possible
- training workers to be able to recognise what different services look like (bearing in mind the types of coverings used has changed over time and may vary depending on age)
- being aware that old pipes/services may be fragile and contain harmful materials, for example:
  - if you uncover asbestos pipes or coverings, you need to follow the guidelines for dealing with asbestos. For more information, see WorkSafe's webpage: Asbestos
  - if you uncover material containing coal tar, dispose of it safely and in accordance with approved disposal procedures.
- assuming all utilities and services are live until proven to be disconnected and safe to work near
- considering if uncovered utilities and services need to be supported (especially if you are digging below them).

For more information, see Section 4.2 of WorkSafe's guidance: Excavation Safety

22.4 Control measures for working near overhead electric lines

Care should be taken when operating near overhead electric lines and power poles. For example, when operating tall mobile plant such as:

- excavators
- waste or recycling collection vehicles
- tree-trimming equipment.

Contact with overhead lines can cause severe injury and death to workers. Excavating too close to a power pole could cause instability or collapse of the pole.

There are minimum safe distance rules for working near overhead power lines and power poles. Close approach consent may be required from the line owner (on a road or roadside, this will typically be the electricity distribution company). You should contact the line owner before work begins to check how close you can get, and what requirements there may be.

For mobile work such as waste and recycling collection, workers need to:

- be aware of their vehicle height when a bin is suspended
- make sure that it is will remain a safe distance from any overhead electric lines.

22.5 What to do if you strike a utility or service

If a utility or service is damaged in any way, the utility or service owner should be contacted immediately.

If you strike an electricity cable or an overhead line, or if a line comes down:

- treat the cable or overhead line as 'live'
- get back at least 10m from the cable
- isolate the area
- if you are in a vehicle or plant, stay there
- if you need to leave the vehicle or plant because of another danger (such as fire or smoke), jump well clear and do not touch the vehicle or plant and the ground at the same time
- never attempt to cover a broken cable or try to fix it yourself
- evacuate the immediate area.

If you hit a gas pipe, or smell or hear gas escaping:

- switch off all machinery and remove all sources of ignition, including mobile phones
- evacuate the immediate area
- isolate the worksite from workers, road users, and the public
- move at least 8 metres away upwind (100 metres for a transmission pipeline) and call Fire and Emergency New Zealand on 111
- leave the damaged pipe to vent
- do not attempt to cover the damaged pipe with any material, including digger buckets
- do not start any vehicles for removal
- do not attempt to extinguish ignited gas fires
- do not inhale fumes.

If you hit a fibre-optic communications cable:

- do not look directly at the cable as laser light can damage your eyesight
- do not attempt to repair the cable.

22.6 More information on working near utilities and services

- WorkSafe's guidance: Excavation safety
- WorkSafe's guidance: Guide for Safety with Underground Services
- New Zealand Utilities Advisory Group Guidance for working safely near utilities and services
- New Zealand Utilities Advisory Group National code of practice for utility operators' access to transport corridors
- NZECP34 The NZ Electrical Code of Practice for Electrical Safe Distances
- National Utility Locating Contractors Association (NULCA)

23.0 Working near the rail corridor

IN THIS SECTION:

Working near the rail corridor can present significant safety risks for road and roadside workers, road users, and rail users.

23.1 Introduction to managing the risks of working near the rail corridor

This section offers guidance for PCBUs on how to manage the risks associated with working near the railway corridor and ways to make sure the work you are doing does not introduce new risks for workers, road users, and rail users.

The rail corridor is the area 5m either side of a railway track.

Examples of activities where workers may be working near the rail corridor include:

- road construction or maintenance
- footpath installation or repair
- vegetation maintenance
- road marking
- TTM layout, or road sign installation
- maintenance of utilities.

Sometimes an activity may not be near the rail corridor, but still have a flow-on effect to the rail corridor – for example, traffic management measures may result in vehicles queuing near or over a level crossing.

Every risk assessment should include consideration of any nearby railway lines and the railway corridor surrounding it.

Any work within the rail corridor requires a permit to enter from the access provider

If your work is likely to include working within the rail corridor (within 5m of the track), or there is a chance workers may need to enter the corridor at any time for any reason, you should first get permission from the access provider. In most instances, the access provider will be KiwiRail. However, some lines operated by heritage and tourist attractions have their own permitting systems. For more information, see: Permit to Enter

23.2 What could go wrong when working near the railway corridor?

Examples of what could go wrong include:

- TTM signs, barriers or directions blocking workers or road users' view of oncoming trains or warning signals at level crossings.
- TTM signs, barriers or directions making it difficult for workers or road users to safely navigate over a level crossing.
- TTM signs, barriers or directions creating confusion or distraction for road users when approaching a level crossing.
- Mobile plant, such as cranes, hitting overhead line equipment within the rail corridor.
- Unintentionally striking rail infrastructure (including underground infrastructure).
- Nearby activities causing loose material to fall on to the railway track (for example, tree trimmings or loose soil).
- Workers tripping or falling on the uneven ground near or inside the rail corridor.
- Workers or plant being struck by a passing train.

23.3 Manage the risks to workers while working near the rail corridor

The first step is to make sure workers are aware of the rail corridor and its boundaries. They then need to know what steps to take to make sure any work near the rail corridor does not put them or others at risk.

When working near the rail corridor

- Make sure the work activity and any TTM set-up do not affect the safe operation of the rail corridor.
- Notify the rail operator (usually that will be KiwiRail) of all work activity, and any associated TMPs within 10m of the track. If the work is within the rail corridor a Permit to Enter is required.
- Make sure workers understand that they should not go within the boundaries of the rail corridor without prior permission or without suitable supervision.
- Limit who can access the rail corridor to those that need to be there.
- Keep all plant at least 4m away from overhead line equipment (if you need to get closer, a Permit to Enter will be required).

When working within 100m of a railway level crossing

- All TMPs should be notified to KiwiRail for approval to make sure it does not impact the safe operation of the level crossing. Any changes to a TMP should be approved also.
- All TMPs that encroach within 5m of the level crossing will require a Permit to Enter
- For certain activities, the access provider will require a Rail Protection Officer (RPO) to be present on site as a rail safety observer. This will be confirmed during the Permit to Enter process.

23.4 More Information on working near the rail corridor

KiwiRail Permit to Enter

24.0 Working in extreme outdoor conditions

IN THIS SECTION:

Take action to protect road and roadside workers from the risks associated with working in extreme outdoor conditions.

24.1 Introduction to managing the risks of working in extreme outdoor conditions

This section offers guidance for PCBUs on how to manage the risks associated with working in extreme outdoor conditions.

Often road and roadside work requires workers to be operating in extreme outdoors conditions. Examples include:

- responding to utility outages during extreme weather events
- de-icing roads in winter
- responding to road or transport-related emergencies during storms
- debris or waste collection or clean-up resulting from flooding or earthquake
- doing road maintenance in remote or exposed locations
- managing or monitoring road closures due to unsafe driving conditions.

Examples of extreme conditions include:

- heavy rain, sleet or hail, lightning
- snow or ice
- low visibility (fog, smog, smoke)
- flooding, inundation, erosion
- high wind
- natural disasters such as volcanic eruption, fire, and tsunami
- remote or exposed locations

Workers may also have to work in extreme temperatures that can be a risk to their health. For more information on working in extreme temperatures, see Section 12.0: Temperature extremes

24.2 What could go wrong when working in extreme conditions?

Working in these conditions creates direct risks to worker safety. For example:

- workers could get cut off from emergency services or facilities
- workers may be at an increased risk of being involved in a vehicle/driving-related incident (particularly where driving conditions are poor)
- workers could be injured by flooding, rock falls, falling trees, slip, trips, and falls.

In addition, working in these conditions can create additional mental stress for workers. For example:

- when responding to an extreme situation (such as flooding) workers' own families may also be affected or at risk by the same event – causing them additional stress
- working in these conditions is usually unplanned and urgent in nature, which can make workers feel additional pressure.

Workers may be at greater risk of suffering from fatigue if they are responding to an emergency situation outside their normal hours of work. For more information, see Section 14.2: Fatigue

24.3 Control measures for working in extreme conditions

While it generally is not possible to eliminate the above examples of extreme conditions, you can take steps to minimise exposure to these conditions and manage the risks that these conditions may create.

Get condition reports

Get accurate condition reports. If the work is not essential, reschedule it for when conditions are better.

Even for essential work, workers should not be permitted to work until the PCBU has been able to manage the risks to a reasonably practicable level.

Make sure workers are trained for the conditions

Make sure workers are trained in safe work practices for essential work in extreme conditions. This should include training in:

- when to use control measures such as monitoring devices, guards, safety nets, warning signals (such as lights and horns), warning signs, working in a buddy system
- when to stop work. Make sure workers have the knowledge, experience, and authority to stop work if they believe conditions have become unsafe to work in
- what additional steps to take to make sure workers are visible to road users when visibility is low (see Section 24.4 *Working in reduced visibility conditions* below for more details)
- driving in winter conditions (such as snow, ice, and heavy rain). If relevant, make sure all vehicles are equipped with winter emergency safety equipment. See Section 24.6: *Winter driving kits* below for more details.

Make sure workers have the right equipment for the conditions

Make sure workers have the right tools and machinery available. Make sure tools and machinery can still operate safety in extreme conditions.

Personal protective equipment (PPE) – Make sure workers have appropriate weather-proof, warm PPE. For more information, see Section 27.0: Personal protective equipment (PPE)

Have a check-in system

Make sure there is a system so you always know where your workers are.

This may be a system where workers regularly check-in with their manager or designated representative to confirm they are safe and to update their location (if carrying out mobile works). How this is done will depend on what communication channels are available.

For example:

- mobile phone calls or SMS/text messages
- RT communication back to the depot
- satellite phones
- GPS tracking on vehicles
- personal locator beacons or emergency position-indicating beacons.

Check-in systems are particularly important for lone workers working in both extreme and normal conditions.

Extreme conditions emergency plan

Have an extreme conditions emergency plan. Make sure workers know what to do if conditions become unsafe or if an emergency arises. This is particularly important for work in remote locations. Where relevant, plans should include the following:

- Onsite rescue procedures.
- The location of self-rescue equipment.
- The location of first aid equipment and details of nearest medical assistance, including the response time or distance.
- Site evacuation procedures.
- How you will coordinate with other services (such as police, fire, and ambulance services).
- What to do when usual communication channels are not available (for example, satellite phones).
- Alternative route plans if the planned route is cut off.
- Rest times. Schedule additional rest times (in sheltered locations). Working in extreme conditions can increase fatigue and stress risks for workers. Providing additional break times may help workers cope with working in the extreme conditions.

24.4 Working in reduced visibility conditions

Extreme conditions may mean road users have reduced visibility. This can affect stopping distances and increase the risk of workers being hit by road users.

Waka Kotahi's New Zealand Guide to Temporary Traffic Management (NZGTTM) provides further guidance on considering visibility when planning and designing TTM for road and roadside work.

While working at night is not considered an 'extreme working condition', workers should be provided with enough light to be seen clearly by road users and others at night.

Workers should also have enough task lighting to safety perform the work task.

24.5 Working in high winds

High winds can create safety risks to road and roadside workers. Examples of risks include:

- injuries from strong wind gusts unexpectedly moving objects (such as traffic management signage or high-sided vehicles)
- injuries from dust or debris in the air
- damage to skin, especially in cold conditions (wind burn)
- injuries from broken tree branches or uprooted trees
- getting blown off height-access equipment (such as elevated work platforms or ladders when working on utility poles).

Control measures for working in high wind conditions

Examples of control measures for working in high winds include:

- Stopping work when it becomes dangerous due to high winds. For example, do not use cranes when it is unsafe to do so.
- Not working at height when high winds are forecasted. If working at height cannot be avoided, workers should be wearing fall protection and be secured properly.
- Being aware of structures or objects that can suddenly move (such as TTM signs). Secure signage and consider helmets to protect workers' heads.
- Keeping a distance from high vehicles such as transport trucks, buses, and vehicles towing trailers. Strong gusts of wind can topple these vehicles.
- Securing loose items by using weights, ropes, chains, or stakes (but check for underground services or utilities first).
- Securing latches, doors, windows, scaffolding, and ladders.
- Avoiding carrying or lifting large objects. If it cannot be avoided, make sure workers have additional support or assistance. Large objects (such as TTM signs) can act as a sail in high winds.
- Using buildings or vehicles to help block the wind.
- Wearing safety glasses or goggles when appropriate.

24.6 Winter driving kits

Workers that are operating in extreme winter conditions, especially in remote locations, should have a winter driving kit.

A winter driving kit includes:

- items they might need to drive safely in extreme winter conditions and
- equipment to keep warm and safe if they are cut off from returning home or to the depot.

A kit could include:

- snow chains for tyres
- a bag of sand (or kitty litter)
- a tow rope or winch
- traction mats
- a snow shovel, snow brush, and ice scraper
- jumper pack/leads
- warning devices such as flares or emergency lights
- extra windscreen wiper fluid appropriate for sub-freezing temperatures
- a roll of paper towels
- a torch and a portable flashing light (and extra batteries)
- a blanket
- extra clothing, including hat and wind-proof pants, and warm footwear
- a first aid kit
- snack bars or other "emergency" food and water
- road maps (especially important if mobile data becomes unavailable).

Workers should be trained in how to use the contents of a winter driving kit safely, and when it would be appropriate to do so. For example:

- how to use jumper cables
- when and how to put on tyre chains
- how to top up de-icing fluid.

24.7 More information on working in extreme conditions

WorkSafe's guidance: General risk and workplace management Part 2 (Section 3.1: *Remote or isolated work*)

PART D

Cultural practices, facilities, PPE, training and certifications, and inductions

IN THIS PART:

25.0 Work in or near culturally sensitive places

IN THIS SECTION:

Māori have belief systems that connect them to the land and environment.

25.1 Introduction to working in or near culturally sensitive places

This section offers examples of how persons conducting a business or undertaking (PCBUs) can include culturally appropriate practices at their worksites.

In te ao Māori, understanding the significance of the environment you are working in is important.

Road and roadside work carried out in locations that are of cultural significance may require some workers to adhere to certain practices prior to, during, or after working in those areas.

Examples of culturally sensitive places include:

- urupā (cemeteries)
- wāhi tapu (sacred sites) such as sites where previous fatalities may have occurred or sites of historical significance.

This is where good iwi engagement and cultural understanding play a big part in ensuring the health, safety, and wellbeing of workers is taken care of.

Below are examples of practices that may be appropriate to include.

25.2 Use of karakia

The use of karakia, regardless of religion or belief systems someone may have, helps to create a positive space for all.

Karakia can be used to start and finish off the day and can also be a means of bringing everyone together. Karakia can be used to help connect people to their environment and ask that the environment protect them.

25.3 Use of water

Another important consideration is the use of water.

Water is considered noa, or free of restriction, and can be used to cleanse and lift the tapu or to free people of restrictions.

Water is used to cleanse after leaving urupā or wāhi tapu, and after being around the dead (for example, after assisting at the site of a fatality).

It is important that this is considered when working near these types of situations and locations.

25.4 Identifying locations of cultural importance

It is recommended that at the planning stage of any work, the contracting PCBU or contractor:

- checks if the area is wāhi tapu, or near an urupā, or if a death has occurred in the area
- arranges for the appropriate tikanga (customs and practices) to take place.

This can be arranged with support from local iwi if the PCBU or contractor does not have the capability to arrange or carry out the appropriate tikanga. This will allow work in the area to continue without restriction.

Where relevant, this process could be done once traffic management is in place, but before the substantial work begins.

Water should be provided nearby for the duration of the work so workers could use it when entering or leaving the affected area if they want.

26.0
Worker facilities

IN THIS SECTION:

Regulations require that certain facilities be provided for workers. This includes clean toilets, handwashing facilities, and first aid.

26.1 Introduction to worker facilities

This section offers guidance for PCBUs on what facilities they need to provide road and roadside workers.

The Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 outline what facilities a PCBU must provide for their workers at their workplace.

A 'workplace' is any place where a worker goes or is likely to be while at work, or where work is being carried out or is usually carried out. This includes temporary or mobile workplaces, which are typical of road and roadside work.

Facilities that must be made accessible to workers, so far as is reasonably practicable, include:


toilets


hand washing facilities


drinking water


eating and rest facilities


first aid facilities

Workers should be able to access these facilities freely and reasonably. Failure to provide access to adequate facilities for workers can cause short-term and long-term harm to workers' health and safety.

Make arrangements for how these facilities will be provided, or made accessible, in the planning stage of projects or activities. This is especially important when portable facilities may be required.

Any costs associated with making these facilities available should be included in initial project budgets or contract agreements. The contracting PCBU and the contractor both have a duty to make sure adequate facilities are accessible for workers.

Facilities must meet the needs of your workforce. Consider the:

- size, location, and nature of your workplace
- number of workers and composition of your workforce
- nature of the work being carried out and workplace hazards.

The following sections provide examples of ways these facilities can be made available to road and roadside workers.

26.2 Facilities you must provide for your workers

Toilets

Workers must have access to clean toilet facilities. It is not acceptable for workers to use the surrounding environment.

Examples of how access to toilet facilities can be achieved include:

- Installing portable toilets at static sites:
  - Portable toilets must be regularly cleaned. They must have hand washing and sanitising facilities available and have bins for sanitary products.
- Transporting portable toilets on trailers for mobile operations.
- Arranging for workers to have access to toilet facilities at local businesses.
- For mobile urban work – providing workers with maps of where all the public toilets are (and allowing them paid time to reach these facilities if they are not within a reasonable walking distance).

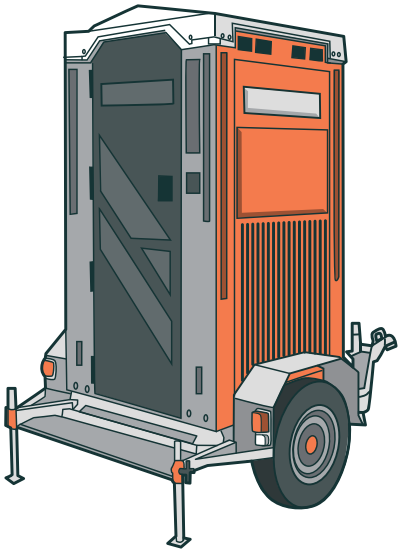

FIGURE 18:
Example of mobile toilet facilities

If workers have to travel long distances to reach toilet facilities, you should consider providing portable toilets. You shouldn't expect workers to use their allocated break time as travel time to reach facilities. Break times should be used by workers to rest, eat, and rehydrate.

Make sure there are enough workers on site to allow for a worker to leave the site to access toilet facilities without compromising site safety. For example, have a back-up traffic control certified worker available to fill in if a traffic control worker needs to leave their post to use the toilet.

Where there are multiple PCBUs working at a site, PCBUs can work together to provide competent back-up people for each other.

Hand washing facilities

Facilities must be available for workers to wash and dry their hands. Providing hand sanitiser may not always be sufficient – especially if there are biological risks present. For more information, see Section 11.0: Biological hazards

Hand washing facilities may be provided through installing portable facilities on site or arranging access to hand washing facilities at local businesses.

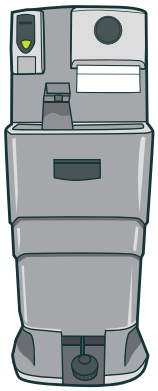

FIGURE 19:
Example of a portable hand washing and sanitising station

Drinking water

Workers must have access to fresh clean drinking water. This may mean transporting bottled water in vehicles for workers on mobile works.

Access to drinking water is particularly important when working in the summer, or in hot environments.

Eating and break facilities

Workers should have somewhere they can prepare and eat food during breaks. This area should be kept clean.

Workers should have a sheltered place to sit during break times.

This may mean providing heated break rooms in winter or air-conditioned break rooms in summer if the outside temperatures are very cold or hot. Having temperature-controlled break facilities will help workers avoid developing temperature-related illnesses. For more information, see Section 12.0: Temperature extremes

Vehicle cabs can be used when there is no other reasonably practicable option, as long as the basic requirements for worker rest can be met.

First aid facilities and resting areas

All workers must be provided access to first aid facilities and equipment, and first aiders.

Workers should also have access to a place to rest if they become unwell, and they are unable to leave the workplace at short notice (such as when working as part of a team in a remote area).

All workers must be given clear information about the first aid available at their workplace, including the:

- location of first aid kits (this may include in work vehicles for mobile work)
- names and locations of first aiders (on smaller work crews, consider if all workers should be trained to ensure coverage during absences)
- location of a first aid room (if there is one)
- procedures to follow when they need first aid.

This information should be given:

- when a worker is first employed (for example, at induction)
- when there is a change in the nature or location of their work
- when there is a change in first aiders (for example, if a first aider leaves or a new one is added).

In mobile workplaces, make sure workers can contact first aiders or emergency services, and know how to respond in an emergency. For example, you could require workers to always carry the contact details of the nearest medical centre or hospital.

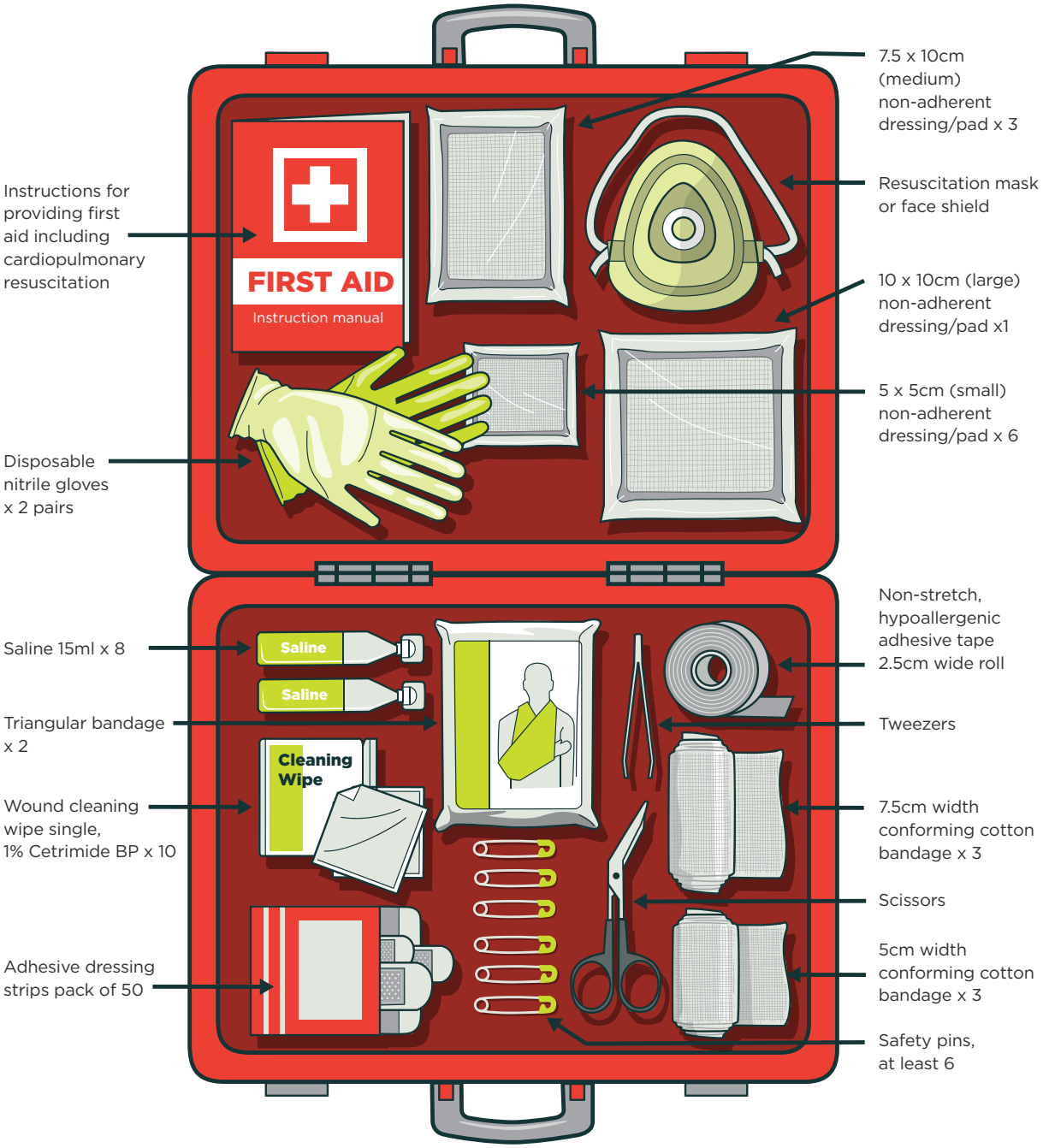

FIGURE 20: Example of a workplace first aid kit

First aid kits

The contents of your first aid kit may vary depending on the type of work. See Figure 20 for an example of things to include.

First aid kits should be kept up to date. Check them regularly and replace any missing or expired items.

You may also need an extreme conditions kit in some situations. For more information, see Section 24.6: Winter driving kits

For more information on workplace first aid, see WorkSafe's webpage: First aid at work

26.3 Additional facilities

Depending on the type of work, you may also need to provide the following additional facilities:

FACILITY	WHEN TO CONSIDER
 Showers	If the work might result in workers needing to wash their body due to contamination with potentially harmful matter.
 Changing rooms	If the workers' clothing is likely to become contaminated or wet.
 Lockers	If workers bring clothing that will not be used at work.

TABLE 8:
Additional facilities

To provide these facilities, you can use mobile port-a-coms or the PCBU's local depot (travel time back to depot to use these facilities should be included in paid time).

26.4 Laundry facilities

If there is a risk of workers clothes being contaminated with harmful substances, these should not be taken home by workers to be washed alongside family washing.

While not required under the regulations, consider providing washing facilities at your local depot or arrange for contaminated work clothes to be commercially cleaned.

26.5 Worker accommodation

Sometimes workers are required to work in a remote location far from where they normally live. In these situations, PCBUs may provide accommodation for workers so they do not have to travel long distances each day to reach the worksite.

Where PCBUs are providing accommodation for workers, they must, so far as is reasonably practicable, maintain the accommodation so that workers are not exposed to health and safety risks arising from the accommodation.

Adequate facilities and amenities should be provided, and the accommodation should be kept clean. For more information, see WorkSafe's fact sheet: Worker accommodation

26.6 Consider culturally appropriate practices when providing facilities

Where possible, keep food preparation areas separated from personal hygiene areas. Encourage workers to understand the importance of keeping tapu or sacred things separate from things that are considered noa or common.

Other examples include:

- avoid sitting on tables
- avoid leaving hard hats on food tables
- avoid washing clothing and tea towels together.

26.7 More information on worker facilities

- WorkSafe's guidance: General risk and workplace management Part 1
- WorkSafe's guidance: General risk and workplace management Part 2 (Section 3.1: Remote or isolated work)
- WorkSafe's guidance: First aid at work
- WorkSafe's guidance: Worker accommodation

27.0 Personal protective equipment (PPE)

IN THIS SECTION:

Only use PPE if there is still a risk after all other reasonably practicable control measures have been put in place.

27.1 Introduction to personal protective equipment (PPE)

This section offers guidance for PCBUs on the requirements for providing PPE for road and roadside workers.

PPE can be used if there is still risk remaining after all other reasonably practicable control measures have been put in place.

For road and roadside work, standard PPE requirements may include:


hard hat or helmet


protective or steel toed boots


eye protection


hi-visibility clothing


protective clothing (such as wet weather clothing)


hearing protection


gloves


sunscreen

Additional PPE (depending on the risks present) include:

- face shields or masks
- Respiratory Protective equipment. For more information, see WorkSafe's webpage: Respiratory Protective Equipment (RPE)
- personal proximity warning devices (especially if there is a lot of mobile plant operating at the worksite)
- PPE required for work with electricity or gas services.

PCBUs should engage with workers when deciding what is the most appropriate PPE for their task and working environment.

27.2 Who can provide PPE

A PCBU who directs the carrying out of work at a workplace must provide PPE to workers carrying out the work unless PPE has been provided by another PCBU in the contracting chain.

The worker can also choose to provide their own PPE but only if they genuinely volunteer to do so for their comfort or convenience. If the worker chooses to provide their own PPE, the PCBU must still make sure the PPE will provide appropriate protection for the worker.

PCBUs cannot pass on the cost of providing PPE (in full or part) to their workers.

27.3 Providing replacement PPE

PCBUs must provide workers with replacement PPE free-of-charge as and when needed.

PPE must be clean, hygienic, and in good working order. PCBUs should make sure that PPE is maintained, repaired, or replaced so that it continues to minimise risk to the worker who uses it. It should be replaced whenever it becomes worn out, is no longer providing adequate protection, or is past its use-by date.

Replacing PPE should be assessed based on need – annual replacement of PPE may not be sufficient.

Adding PPE allowances to workers' pay to cover future PPE expenses is not recommended. It is not reasonable to expect a worker to keep money aside from each pay period for future PPE purchases. There is a risk workers may wear PPE past its use-by date, especially if they have not accrued enough allowance to cover an expensive item.

27.4 PPE must be fit for purpose

Any PPE, including high-visibility clothing, must meet basic PPE requirements for fit, function and performance, and be reasonably comfortable to wear.

Workers should receive training in how to wear, use, clean, and store their PPE correctly. For more information, see WorkSafe's webpage: Personal protective equipment – a guide for businesses

27.5 Make sure PPE does not create new risks

When assessing PPE needs, discuss with your workers what new risks the proposed PPE may create and how you can eliminate or minimise those risks. The following are examples of risks associated with different types of PPE:

Hearing protection

Some types of hearing protection can affect workers' situational awareness (for example, preventing them from hearing approaching vehicles).

There are types of hearing protection that can protect workers hearing without compromising situational awareness.

Heavy or thick clothing

Heavy or thick clothing may cause workers to overheat, affect their mobility, or create entanglement risks.

Talk with your workers about alternative clothing options (such as lighter more breathable fabrics or closer fitting options).

Long sleeves and trousers

Long sleeves and trousers can provide good protection from a number of hazards, including:

- bitumen spray
- dust
- small flying objects such as gravel chips
- sharp objects
- chemicals
- electricity.

However, having blanket site rules requiring long sleeves and trousers may lead to unnecessary discomfort for workers (especially during summer months).

Consider if short sleeves and shorts can be worn safely (with the use of sunscreen when needed), and only require long sleeves and trousers for tasks where they are providing specific protection.

You could also consider if alternative protection (for example, chaps and gaiters) may be appropriate.

27.6 Worker duties and PPE

Workers have duty to follow the PCBU's reasonable instruction and requirements regarding PPE, such as:

- what and when it should be worn
- how it should be cared for and stored.

Workers should tell their manager as soon as there are any issues with the PPE (such as when it is no longer fitting properly or has broken).

27.7 More information on PPE

- WorkSafe's guidance: General risk and workplace management Part 1 (details the regulatory requirements regarding PPE)
- WorkSafe's guidance: Personal protective equipment – a guide for businesses
- WorkSafe's guidance: Respiratory Protective Equipment (RPE)
- WorkSafe's guidance: Protective clothing
- WorkSafe's guidance: Protecting your workers' eyes
- WorkSafe's guidance: Religious or cultural attire and health and safety

28.0 Training, certifications, and competency

IN THIS SECTION:

All road and roadside workers must have appropriate training and certifications and be competent to do their work safely.

28.1 Introduction to training, certifications, and competency

This section offers guidance for PCBUs on making sure their workers have the right training, certifications, and competency.

All road and roadside workers should have the appropriate certifications, licences, and training in how to perform their job or task in a manner that is safe and healthy for them and others.

All road and roadside workers should also receive training in how to keep safe when working in the road or roadside environment.

Worker training requirements will depend on:

- the level of risk their job involves
- what industry or occupation-specific training requirements and certifications (including licences) are required
- the knowledge, experience, and previous training of the worker.

28.2 Check workers have required certifications, licences, and training

PCBUs at the top of the contracting chain have a responsibility to make sure all workers have the appropriate training and certifications for the work they will be doing. This includes workers that may be several steps down the contracting chain.

Where reasonably practicable, arrangements should be made to specify and check these training, qualifications, and licensing/certification requirements at the planning stages of a project.

PCBUs should make sure workers meet industry training and certification requirements before they start work. They should check:

- workers have the relevant temporary traffic management (TTM) qualifications before working as a traffic controller (TC)
- workers have the appropriate licences and training to operate specific types of mobile plant (such as for tracks and rollers)
- any industry-required health and safety, and site access training.

Only competent persons who have the relevant certifications for training others should provide training.

28.3 Check worker competency before work begins

Before starting work, all workers, including temporary workers, should be assessed on their current competence and experience, and what further training they may require. This is usually done by the site manager or someone the PCBU deems competent to make that assessment.

A competent person is someone who has the appropriate skills, training, knowledge, and experience to perform the task or role.

Having a current licence or certification is not always an indication of a worker's actual level of competence when on the job. In some instances, workers may need further onsite training or retraining before starting work.

28.4 Supervise new or inexperienced workers

Supervision may be needed for new or inexperienced workers until they have shown they are competent to carry out the tasks unsupervised.

Experienced workers may also need to be supervised for new tasks or if they have not done that particular task in a long time.

28.5 Ongoing training

Workers should receive ongoing training, which may include:

- refresher training when needed
- training when new vehicles or plant, or new features are introduced
- training when the work changes and the task needs to be done differently
- when workers are due for recertification
- when competence or qualification requirements change
- continuing professional development.

Training needs should be monitored.

28.6 Keep a record of all training and certifications

Keep a record of all training that has been completed, and certifications and licences that have been issued for each worker.

Records should also include when refresher training or recertification is due. This will help make sure the most appropriate person is allocated a particular task and identify workers who need refresher training.

This information should be made available to others in the contracting chain that have a duty towards those workers (provided the worker has consented to this information being shared).

All storing of worker training information and sharing of that information is subject to The Privacy Act 2020

28.7 More information on training, certifications, and competency

- WorkSafe's guidance: Providing information, training, instruction or supervision for workers
- CHASNZ ConstructSafe

29.0 Inductions

IN THIS SECTION:

Inductions are one way you can engage with road and roadside workers and give them the information they need to work safely at a worksite.

29.1 Introduction to inductions

This section offers guidance for PCBUs on how to use worker inductions to promote good health and safety practices at road and roadside worksites.

Inductions are a useful way to introduce workers and visitors to key information and resources they need to keep themselves and other workers safe and healthy while at work.

This information can be shared at an initial induction when a worker joins a project or workplace. It can also be shared at daily briefings such as toolbox or tailgate talks.

Keep a record of workers who have completed induction and any other site access requirements.

29.2 Initial inductions

Initial worker inductions are useful for setting the scene for workers.

Initial inductions should include relevant site-specific information and requirements such as:

- clear descriptions of the key roles and responsibilities of those on site, what these people look like, where they can be found, and how to contact them (having a photo board may help)
- entering and exiting the site
- speed limits
- site layout
- locations of facilities, including first aid
- emergency procedures
- known hazards on site and the control measures being used to manage the risks arising from hazards (for example, harnesses to be used for all work at height)
- potential hazards that could be encountered (especially for mobile work)
- how to report an incident or hazard
- who their health and safety representatives (HSRs) are

- how worker mental any physical health and wellbeing is promoted and supported (and where they can seek help if needed)
- rules that should be complied with
- health and safety documents, policies, and plans specific to the worksite, such as a vehicle movement plan.

Some induction information such as general health and safety principles may be covered in industry-accepted health and safety, and site access training assessments that are completed by workers beforehand.

Site inductions are usually administered by the site manager or a designated representative.

29.3 Te ao Māori in induction – whakawhanaungatanga

In a te ao Māori context, induction can be likened to whakawhanaungatanga which is, in essence, an introduction of oneself. This is important for all workers as it helps in:

- making connections
- making sure everyone knows who they are working with and who they need to know (in terms of emergency or reporting lines)
- building trust and confidence in each other.

Worker inductions allow workers the opportunity to introduce who they are and where they come from. Introductions can provide opportunities for personal connections to be made (not just within their business but across other businesses, when applicable).

Where relevant, consider inviting workers' whānau to whānau inductions (a separate event run for whānau) so members of their whānau can feel a part of what is happening. Undertaking a holistic approach regarding workers and their whānau can help achieve a healthier and safer home, and work-life balance.

29.4 Pre-work briefings (toolbox/tailgate talks)

Pre-work briefings (sometimes known as toolbox talks or tailgate talks) are a good way to check-in with workers at the beginning of each shift. They can be used to:

- let workers know what will happening on site that day, and how it will be done in a healthy and safe way
- advise workers of any specific activities and risks to look out for that day (for example, expected weather conditions, or new or additional mobile plant in operation at the worksite)
- check with workers on their wellbeing and readiness for work.

This could be backed up with a visual aid such as a whiteboard with key details.

Karakia

Consider having a karakia at the commencement of shifts/toolbox talks/health and safety meetings.

The use of karakia (regardless of the religion or belief systems of your workers), is a means of creating a positive space for all. Karakia can be used to start and finish off the day, and is also be a means of bringing everyone together. Karakia can be used to connect workers to their environment and asks for that environment to protect them.

29.5 Tips for preparing an induction

When preparing induction material, you should consult with workers and all PCBUs in the contracting chain. You should also aim to:

- keep it as brief as possible
- use simple straightforward language
- tailor the document to suit the type of worksite or activity and cover the health and safety risks relevant to that site or activity. There is no such thing as a one-size-fits-all induction document
- use visual aids such drawings, diagrams, or objects where possible (they can often convey the message much more effectively than words)
- consider the range of literacy and language skills of workers that may need to read and understand it
- consider the range of skills, knowledge, and experience of new workers and visitors to the site (avoid using jargon or acronyms without explaining what they mean)
- consider providing any induction documentation in other languages.

All PCBUs on site should be fully aware of their roles and responsibilities before any activity is started. Site inductions should be completed for every new worker or visitor to a site.

In addition, the site manager or designated representative should:

- review the induction document regularly. Reviews should include considering any feedback from workers and other PCBUs in the contracting chain
- monitor all workers on site to make sure they are working safely and complying with the site rules
- make sure action is taken when someone does not follow the site rules, or they operate in an unsafe manner.

30.0
More information

IN THIS SECTION:

30.1 WorkSafe guidance

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Reasonably practicable
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What events need to be notified
Overlapping duties
Health and safety by design: an introduction
PCBUs working together: Section 2: Building health and safety into contract management

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Hazardous substances Risk Management
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Providing information, training, instruction, or supervision for workers
Worker engagement and participation
Worker representation through Health and Safety Representatives and Health and Safety Committees
Worker engagement, participation, and representation
Introduction to the Health and Safety at Work Act
Worker representation
Health and Safety Committees
Health and Safety Representatives

30.2 Legislation

New Zealand Legislation – Health and Safety at Work Act
Meaning of PCBU section 17 of HSWA
Reasonably practicable section 22 of HSWA
Primary duty of care section 36 of HSWA
Duty to engage with workers section 58 of HSWA
Health and Safety at Work (Hazardous Substances) Regulations 2017

30.3 Waka Kotahi NZ Transport Agency

New Zealand Guide to Temporary Traffic Management

30.4 Other

Health and disability commission
Government Procurement Rules
Ministry of Health: Workplace infectious disease prevention
National Utility Locating Contractors Association (NULCA)
Permit to Enter
New Zealand Utilities Advisory Group Guidance for working safely near utilities and services
New Zealand Utilities Advisory Group National code of practice for utility operators' access to transport corridors
NZECP34 The NZ Electrical Code of Practice for Electrical Safe Distances
CHASNZ ConstructSafe
Austroads' Guide to Temporary Traffic Management

Appendices

IN THIS SECTION:

Appendix 1: Glossary

TERM	DEFINITION
Barrier	An obstruction placed to prevent access to a worksite which physically separates it from vehicles in live lanes and other road users.
Closure	The physical area from which the road users are to be excluded. This includes, but is not limited to, shoulder closures, lane closures, and road closures.
Competent person	Someone who has the appropriate skills, training, knowledge, and experience to perform the task or role.
Contracting PCBU	Usually, the initiator of a contract for work or services. The contracting PCBU is sometimes referred to as the client or principal.
Contractor	In road and roadside work, a 'contractors' is a PCBU that has been awarded a contract by the contracting PCBU (for example, an RCA or utility/service provider), or a PCBU that has been awarded a contract to do work near or on a private road.
Control measure	A way of eliminating or minimising risks to health and safety.
CoPTTM	Code of Practice for Temporary Traffic Management – produced by Waka Kotahi. Now replaced by the Waka Kotahi's New Zealand Guide to Temporary Traffic Management
Detour	A temporary route to guide road users around a worksite operation.
Emergency	An uncontrolled event that has caused, or could cause: – loss of life – injury – serious property damage. It can include declarations of civil defence emergencies, vehicles crashes, or other significant incidents. It does not include delays unless these are the result of one of the above situations.
Exclusion zone	An area set aside for a specific activity where only authorised workers can operate, for example a forklift operating zone. Can also include the area above the activity.
Fatigue	A physiological state where someone is unable to mentally and physically function as they usually would. This is caused by four main factors: – missing out on sleep – being awake for too long – working and sleeping in the wrong parts of the body clock cycle – workload (mental and physical).
Fencing	Using temporary fences to keep pedestrians/cyclists from entering a worksite.
Hazard	A potential source of harm. It could include an object, situation, or behaviour.
HSWA	Health and Safety at Work Act 2015. The key work health and safety legislation in New Zealand. HSWA applies to all work and workplaces unless specifically excluded. You can find the full text of the Act on the New Zealand Legislation website.
Live lane	A traffic lane available for use by road users.
Mental harm	The significant cognitive, emotional, or behavioural impact arising from, or exacerbated by, work-related risk factors. Mental harm may be immediate or long-term and can come from single or repeated exposure.
Mental wellbeing	A state of wellbeing in which every individual: – realises his or her own potential – can cope with the normal stresses of life – can work productively and fruitfully, and – is able to make a contribution to her or his community.

TERM	DEFINITION
Mobile plant	Plant that is powered or self-propelled, such as vehicles and equipment. Examples include bulldozers, mobile cranes, forklifts, elevating work platforms, and tractors.
Overlapping duties	When a PCBU shares duties with other PCBUs. When two or more PCBUs are working together at the same location or through a contracting chain, they must work together to fulfil their duties of care and manage risks. Where those duties overlap, the PCBUs must consult, cooperate, and coordinate with each other to meet their health and safety responsibilities to workers and others.
PCBU	Person conducting a business or undertaking. In most cases a PCBU will be a business entity, such as a company. However, an individual carrying out business as a sole trader or self-employed person is also a PCBU. A PCBU does not include: – workers or officers of a PCBU – volunteer associations with no employees, or – home occupiers that employ or engage a tradesperson to carry out residential work.
Pedestrian	A person travelling on foot (not on or inside a vehicle). Includes people walking, running, and using mobility aids.
Personal proximity warning device	A system where site vehicles/mobile plant are fitted with a device and pedestrians wear a device that can detect when the two are within a specified distance of each other. The system can send a warning to the driver and/or the pedestrian that they are getting near to each other.
PPE	Personal protective equipment. Anything used or worn by a person (including clothing) to minimise risks to the person's health and safety. This may include but is not limited to: – respiratory protective equipment – protective helmets – protective eyewear – protective boots – protective gloves – hearing protection – high-vis clothing – sunhats – sunscreen and lip protection – safety harness systems.
Practice note	A practice note provides good practice guidance for a traffic management activity where risks and mitigation measures are standard practice and repeated regularly. These are developed and maintained by businesses or industry organisations but can be accessed via Waka Kotahi's website for all to refer to.
Primary duty of care	A PCBUs legal obligation to ensure, so far as is reasonably practicable, the health and safety of workers, and that other persons are not put at risk by its work. This is called the 'primary duty of care'.
Proximity warning device	Technology used on mobile plant to warn the operator of the mobile plant when they are within a specified proximity to other mobile plant, objects, or pedestrians. The system can send an audible warning to the driver and/or the pedestrian that they are getting near to each other.
Reasonably practicable	What is, or was, reasonably able to be done to ensure health and safety, taking into account and weighing up relevant matters including: – the likelihood of the risk concerned occurring or workers being exposed to the hazard – the degree of harm that might result – what the person concerned knows, or ought reasonably to know, about: - the hazard or risk - ways of eliminating or minimising the risk – the availability and suitability of ways to eliminate or minimise the risk – after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk. For more information, see WorkSafe's fact sheet: Reasonably practicable

TERM	DEFINITION
Request for proposal (RFP)	A formal request from an agency asking suppliers and/or contractors to propose: – how their goods, services, or works can achieve a specific outcome, and – their prices. An agency may be open to innovative ways of achieving the outcome.
Request for tender (RFT)	A formal request from an agency asking for offers from potential suppliers and/or contractors to supply clearly defined goods, services, or works. Often there are highly technical requirements and a prescriptive solution.
Risk	Risks arise from people being exposed to a hazard (a source of harm).
Road/road reserve	The area of land between the legal boundaries, usually fence line to fence line (including any safety run-off areas), which is dedicated to allowing the passage of road users. The road reserve also includes bridges and an airspace of six metres directly above the road surface.
Roadside	The area near a road that may be affected by activity on the road, or where activity in that area may affect the road.
Road user	Any user of the road, including motor vehicle drivers, motorcyclists, pedestrians, and cyclists.
Site induction	Information, training, and instruction provided to workers and visitors to a worksite. Inductions should include basic health and safety requirements (including highlighting the key risks on site) and what to do in an emergency.
Site traffic management specialist (STMS)	A qualified person who has specific responsibility for documentation and management of temporary traffic management (TTM).
Spotter/spotting	A person who helps drivers/operators when manoeuvring vehicles or mobile plant at a worksite. Often used when visibility is limited or there are other hazards in the area.
Static worksite	Worksites where the workers are at the same site for more than one hour. These sites generally have fixed traffic management practices and may have facilities in place.
Subcontractor	A PCBU hired by a contractor to carry out temporary, paid work under contract.
Temporary Traffic Management Zone (TTM zone)	The section of road defined at each end either by advance warning and end of works signs, or between vehicles in a mobile operation, including the vehicles themselves.
Traffic controller (TC)	A qualified person who has specific responsibility to manage road user traffic at or near a worksite.
Traffic management (TM)	The process of managing road users through or past a closure in a safe manner.
Traffic management plan (TMP)	A document describing the design, implementation, maintenance, and removal of temporary traffic management (TTM) while the associated activity is being carried out within the road reserve or adjacent to it and affecting the road reserve.
Vehicle movement plan	A plan that documents how vehicle and mobile plant risks are being managed within a worksite. This is different to a traffic management plan.
Vulnerable road user	Pedestrians (including people on skateboards, roller skates, foot scooters, cyclists and motorcyclists (including mopeds), and those using mobility aids, such as powered wheelchairs)

TERM	DEFINITION
Worker	An individual who carries out work in any capacity for a PCBU. A worker may be: – an employee – a contractor or subcontractor – an employee of a contractor or subcontractor – an employee of a labour hire company – an outworker (including a homeworker) – an apprentice or a trainee, a person gaining work experience or on a work trial – a volunteer worker. Workers can be at any level (for example, managers are workers too). PCBU is also a worker if the PCBU is an individual who carries out work in that business or undertaking.
Worksite	The area that is available for workers to complete the activity. In a road and roadside work context, this includes the area surrounding a worker, their vehicle, plant, or equipment during both mobile and static operations. Where there is a temporary traffic management set-up in place, the worksite will typically be within the TTM zone.

Appendix 2: Health and Safety at Work Act duties

The Health and Safety at Work Act 2015 (HSWA) is New Zealand's key work health and safety law.

All work and workplaces are covered by HSWA unless they have been specifically excluded. For example, HSWA does not apply to the armed forces in certain situations.

HSWA sets out the work health and safety duties that duty holders must comply with.

There are four types of duty holder under HSWA:

- a person conducting a business or understanding (PCBU)
- an officer
- a worker
- an 'other person' at the workplace.

Most duties under HSWA relate to **how** work is carried out. However some duties are linked to **where** work is carried out: the workplace.

A **workplace** is a place where work is being carried out or usually carried out for a business or undertaking. It includes any place where a worker goes or is likely to be while at work section 20 of HSWA

DUTY HOLDER	WHO THEY ARE?	EXAMPLES	WHAT ARE THEIR DUTIES?	FOR MORE INFORMATION
Person Conducting a Business or Undertaking (PCBU)	A person conducting a business or undertaking (PCBU) may be an individual person or an organisation	– a business – a self-employed person – partners in a partnership – a government agency – a local council – a school or university.	A PCBU has many duties. Key duties are summarised below. **Primary duty of care** section 36 of HSWA A PCBU must ensure, so far as is reasonably practicable, the health and safety of workers, and that other persons are not put at risk by its work.	Introduction to the Health and Safety at Work Act 2015 Appendix 3 of this guidance for an explanation of 'so far as is reasonably practicable'
	The following **are not** PCBUs: – officers – workers – other persons at a workplace – volunteer associations that do not have employees – home occupiers (such as home owners or tenants) who pay someone to do work around the home section 17 of HSWA		**Managing risks** section 30 of HSWA Risks to health and safety arise from people being exposed to hazards (anything that can cause harm). A PCBU must manage work health and safety risks. – A PCBU must first try to **eliminate** a risk so far as is reasonably practicable. This can be done by removing the source of harm – for example, removing faulty equipment or a trip hazard. – If it is not reasonably practicable to eliminate the risk, it must be **minimised** so far as is reasonably practicable.	Identifying, assessing and managing work risks Section 2 of this guidance
			Overlapping duties: working with other PCBUs section 34 of HSWA A PCBU with overlapping duties must, so far as is reasonably practicable, consult, cooperate and coordinate activities with other PCBUs they share duties with.	Appendix 4 of this guidance Section 3 of this guidance

DUTY HOLDER	WHO THEY ARE?	EXAMPLES	WHAT ARE THEIR DUTIES?	FOR MORE INFORMATION
			Involving workers: worker engagement, participation and representation Part 3 of HSWA A PCBU must, so far as is reasonably practicable, engage with their workers (or their workers' representatives) about health and safety matters that will directly affect the workers. A PCBU must have worker participation practices that give their workers reasonable opportunities to participate in improving health and safety on an ongoing basis.	Appendix 6 of this guidance
Upstream PCBU	A PCBU in the supply chain	– a designer – a manufacturer – a supplier – an importer – an installer, constructor, or commissioner.	**Upstream PCBU** sections 39–43 of HSWA An upstream PCBU must ensure, so far as is reasonably practicable, that the work they do or the things they provide to other workplaces do not create health and safety risks.	Appendix 5 of this guidance
Officer	A specified person or a person who exercises significant influence over the management of the business or undertaking section 18 of HSWA	– a company director – a partner or general partner – a chief executive.	**Officer** section 44 of HSWA An officer must exercise due diligence that includes taking reasonable steps to ensure that the PCBU meets their health and safety duties.	Introduction to the Health and Safety at Work Act 2015
Worker	An individual who carries out work for a PCBU section 19 of HSWA	– an employee – a contractor or sub-contractor – an employee of a contractor or sub-contractor – an employee of a labour hire company – an outworker (including homeworker) – an apprentice or trainee – a person gaining work experience or on work trials – a volunteer worker.	**Worker** section 45 of HSWA A worker must take reasonable care of their own health and safety, and take reasonable care that they do not harm others at work. A worker must cooperate with reasonable policies and procedures the PCBU has in place that the worker has been told about. A worker must comply, as far as they are reasonably able, with any reasonable instruction given by the PCBU so the PCBU can meet their legal duties.	Introduction to the Health and Safety at Work Act 2015
Other person at the workplace	An individual present at a workplace (not a worker)	– a workplace visitor – a casual volunteer (not a volunteer worker) – a customer.	**Other person at the workplace** section 46 of HSWA An 'other person' has a duty to take reasonable care of their own health and safety, and not adversely affect the health and safety of anyone else. They must comply with reasonable instructions relating to health and safety at the workplace.	Introduction to the Health and Safety at Work Act 2015

Appendix 3: So far as is reasonably practicable

section 22 of HSWA

Certain PCBU duties (the section 36–43 duties including the primary duty of care) must be carried out 'so far as is reasonably practicable'.

What to consider when deciding what is 'reasonably practicable'

Just because something is possible to do, does not mean it is reasonably practicable in the circumstances.

Consider:

- What possible actions can be taken to ensure health and safety?
- Of these possible actions, at a particular time, what is reasonable to do?

Think about the following questions.

WHAT IS KNOWN ABOUT THE RISK?

- How likely is the risk to occur?
- How severe is the illness or injury that might occur if something goes wrong?
- What is known, or should reasonably be known, about the risk?

WHAT IS KNOWN ABOUT POSSIBLE CONTROL MEASURES?

- What is known, or should reasonably be known, about the ways (control measures) to eliminate or minimise the risk?
- What control measures are available?
- How appropriate (suitable) are the control measures to manage the risk?
- What are the costs of these control measures?
- Are the costs grossly disproportionate to the risk? Cost must only be used as a reason to not do something when that cost is grossly out of proportion to the risk.

While PCBUs should check if there are widely used control measures for that risk (such as industry standards), they should always keep their specific circumstances in mind. A common industry practice might not be the most effective or appropriate control measure to use.

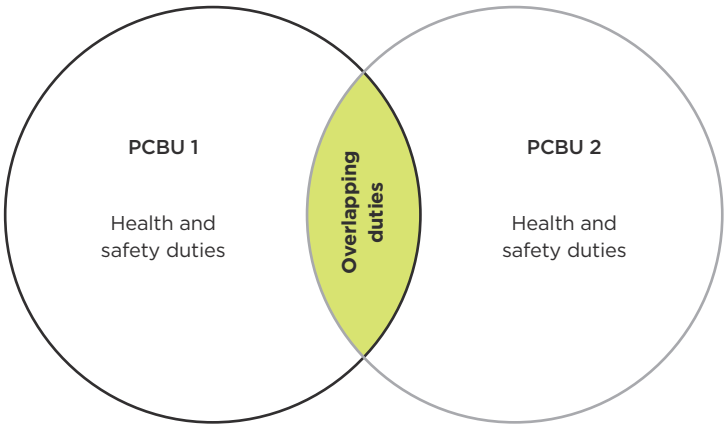
If PCBUs are not sure what control measures are appropriate, WorkSafe recommends getting advice from a suitably qualified and experienced health and safety professional.

For more information, see our guidance: Reasonably practicable

Appendix 4: Working with other PCBUs – overlapping duties

section 34 of HSWA

More than one PCBU can have a duty in relation to the same matter. These PCBUs have overlapping duties – this means that the duties are shared between them.



Duties regularly overlap:

- in a shared workplace (for example, a building site or a port) where more than one business has control and influence over the work on site.
- in a contracting chain, where contractors and subcontractors provide services to a contracting PCBU or client and do not necessarily share the same workplace.

A PCBU must, so far as is reasonably practicable, consult, cooperate and coordinate activities with all other PCBUs they share duties with so that all PCBUs can meet their joint responsibilities.

A PCBU cannot transfer or contract out of their duties, or pass liability to another person.

However a PCBU can make an agreement with another PCBU to fulfil specific duties. Even if this occurs, all PCBUs are still responsible for meeting their legal duties.

> EXAMPLE
>
> A local hotel contracts out housekeeping services to an agency. The hotel and agency both have a duty to ensure the health and safety of the housekeeping workers, so far as is reasonably practicable. This includes the duty to provide first aid facilities.
>
> The agency reaches an agreement with the hotel – if their workers need first aid while working at the hotel they can use the hotel's first aid facilities.

For more information, see our guidance: Overlapping duties

Appendix 5: Upstream duties sections 39–43 of HSWA

A PCBU in the supply chain (upstream) also has a duty to ensure, so far as is reasonably practicable, that the work they do or the things they provide to other workplaces do not create health and safety risks.

An upstream PCBU is a business that:

- designs plant, substances, or structures
- manufactures plant, substances, or structures
- imports plant, substances, or structures
- supplies plant, substances, or structures
- installs, constructs or commissions plant or structures.

Upstream businesses are in a strong position to eliminate or minimise risk. They can influence and sometimes eliminate health and safety risks through designing, manufacturing, importing or supplying products that are safe for the end user.

> EXAMPLE
>
> A worker using a badly designed or poorly manufactured saw may be at risk of injury. This risk should have been eliminated or minimised, so far as was reasonably practicable, by the designer or manufacturer.

For more information, see our website: worksafe.govt.nz

Upstream duties for designers section 39 of HSWA

A designer creates or modifies a design for plant, substances or structures that are to be used or operated, or could be used or operated, in a workplace.

A designer has a duty, so far as is reasonably practicable:

- to make sure the products they design do not create health and safety risks for the people that use them and those nearby
- to make sure the products they design have been tested so they are safe for use in a workplace
- to give the following information to those who will use the designed products:
  - the design's purpose or intended use
  - the results of any calculations or tests
  - any general and current relevant information about how to safely use, handle, store, construct, inspect, clean, maintain, repair, or otherwise work near the designed products.

These requirements apply across the product's entire lifecycle – from manufacture and construction, through to everyday use, decommissioning and disposal.

For more information, see our guidance: Health and safety duties for businesses that design products for workplaces

Upstream duties for manufacturers section 40 of HSWA

A manufacturer makes plant, substances or structures that are to be used, or could be used or operated, in a workplace.

A manufacturer has a duty, so far as is reasonably practicable:

- to make sure the products they manufacture do not create health and safety risks for the people that use them and those nearby
- to make sure the products they manufacture have been tested so they are safe for use in a workplace

- to give the following information to those that will use the manufactured products:
  - the purpose or intended use of each product
  - the results of any calculations and tests
  - any general and current relevant information about how to safely use, handle, store, construct, inspect, clean, maintain, repair, or otherwise work near the manufactured products.

These requirements apply across the product's entire lifecycle – from manufacture and construction, through to everyday use, decommissioning and disposal.

For more information, see our guidance: Health and safety duties for businesses that manufacture products for workplaces

Upstream duties for importers section 41 of HSWA

An importer imports plant, substances or structures that are to be used, or could be used or operated, in a workplace.

An importer is a business:

- that goods are imported **by**, or
- that goods are imported **for**.

Importation is another word for importing. Importation refers to the **arrival of goods** in New Zealand from a point outside New Zealand. These goods can arrive in any manner.

An importer has a duty, so far as is reasonably practicable:

- to make sure the products they import do not create health and safety risks for the people that use them and those nearby
- to make sure the products they import have been tested so they are safe for use in a workplace
- to give the following information to those who will use the imported products:
  - the purpose or intended use of each product
  - the results of any calculations and tests
  - any general and current relevant information about how to safely use, handle, store, construct, inspect, clean, maintain, repair, or otherwise work near the imported products.

These requirements apply across the product's entire lifecycle – from construction or assembly, through to everyday use, decommissioning and disposal.

Imported products must also meet all New Zealand regulatory requirements relevant to that product.

For more information, see our guidance: Health and safety duties for businesses that import products for workplaces

Upstream duties for suppliers section 42 of HSWA

A supplier supplies plant, structures or substances that may be used in a workplace.

A supplier has a duty, so far as is reasonably practicable:

- to make sure the products they supply do not create health and safety risks for the people that use them and those nearby
- to make sure the products they supply have been tested so they are safe for use in a workplace

- to give the following information to those who will use the supplied products:
  - the purpose or intended use of each product
  - the results of any calculations and tests
  - any general and current relevant information about how to safely use, handle, store, construct, inspect, clean, maintain, repair, or otherwise work near the supplied products.

These duties do not extend to the sale of second-hand plant sold 'as is'.

These requirements apply across the product's entire lifecycle – from construction or assembly, through to everyday use, decommissioning and disposal.

For more information, see our guidance: Health and safety duties for businesses that supply products for workplaces

Upstream duties for installers, constructors or commissioners of plant or structures section 43 of HSWA

An installer/constructor builds and/or assembles and installs plant and structures that may be used at a workplace. A commissioner performs adjustments, tests and inspections on plant and structures before they are used for the first time in a workplace.

An installer, constructor or commissioner has a duty, so far as is reasonably practicable, to make sure that the way the plant or structure is installed, constructed or commissioned does not create health and safety risks to the people that come into contact with it across the product's entire lifecycle – from construction or assembly, through to everyday use, decommissioning and disposal.

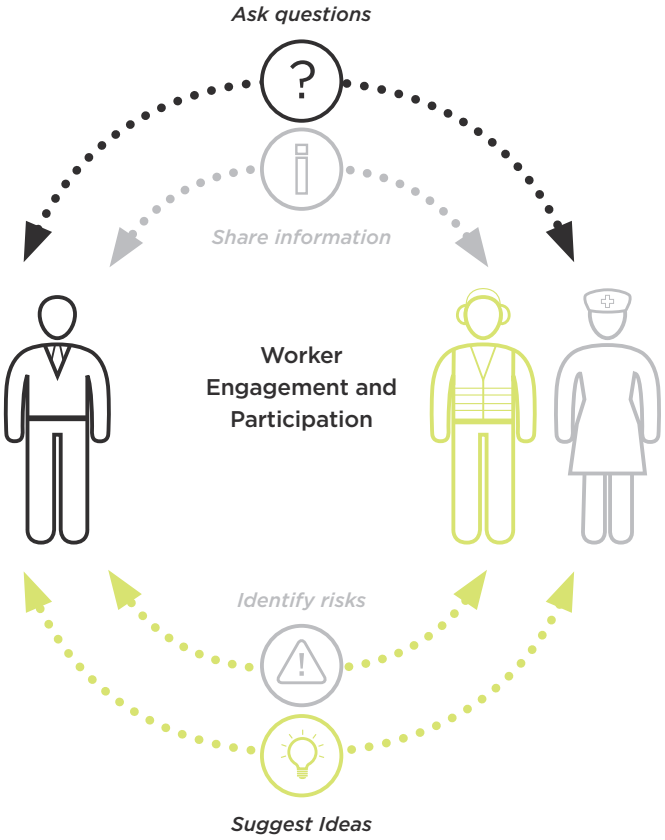
For more information, see our guidance: An additional health and safety duty for businesses that install, construct or commission plant or structures for workplaces

Appendix 6: Worker engagement, participation and representation Part 3 of HSWA

Engage with workers and enable their participation

A PCBU has two main duties related to worker engagement and participation:

- to engage with workers on health and safety matters that affect or are likely to affect workers, so far as is reasonably practicable, and
- to have practices that give workers reasonable opportunities to participate effectively in the ongoing improvement of work health and safety.



A PCBU can engage with workers by:

- sharing information about health and safety matters so that workers are well-informed, know what is going on and can contribute to decision-making
- giving workers reasonable opportunities to have a say about health and safety matters
- listening to and considering what workers have to say at each step of the risk management process
- considering workers' views when health and safety decisions are being made
- updating workers about what decisions have been made.

A PCBU must engage with workers during specified times, including when identifying hazards and assessing risks.

A PCBU must have clear, effective, and ongoing ways for workers to suggest improvements or raise concerns.

Worker representation

Workers can be represented by a Health and Safety Representative (HSR), a union representing workers, or a person that workers authorise to represent them (for example, a community or church leader, or another trusted member of the community).

HSRs and Health and Safety Committees (HSCs) are two well-established methods of participation and representation. If workers are represented by an HSR, worker engagement must also involve that representative.

For more information

WORKSAFE GUIDANCE

Good practice guidelines

Worker engagement, participation and representation

Interpretive guidelines

Worker representation through Health and Safety Representatives and Health and Safety Committees

Pamphlets

Worker representation

Health and Safety Committees

Health and Safety Representatives

Disclaimer

This publication provides general guidance. It is not possible for WorkSafe to address every situation that could occur in every workplace. This means that you will need to think about this guidance and how to apply it to your particular circumstances.

WorkSafe regularly reviews and revises guidance to ensure that it is up-to-date. If you are reading a printed copy of this guidance, please check worksafe.govt.nz to confirm that your copy is the current version.

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