Living Safely Manual

People First, Every Time

Network Maintenance Team

Wellington Water Alliance

Version 2.5 | 10-02-2025

Wellington Water

Fulton Hogan

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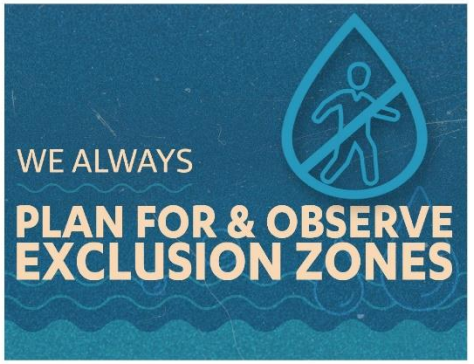
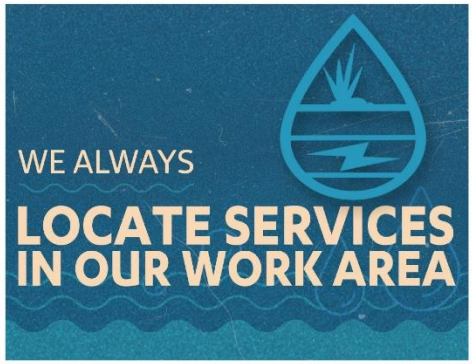
LIFE SAVING ACTIONS





Life Saving Rules

People at the heart of everything

Scan for info on each rule

We always have **an effective plan to manage traffic, cyclists and pedestrians**.

We always **keep ourselves and others away from machinery** when we don't need to be near it.

We are always **competent and licensed** (where required) to operate plant.

We always **wear our seatbelts**.

We always **use fall protection** when working at heights.

We always **keep clear of suspended loads**.

We always **isolate, lock out and test** before working on plant and equipment.

We always **follow the permit process** when a permit is required.

We are always **drug and alcohol free** when working.

We always **use the PPE required**.

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Living Safely

People at the heart of everything

Critical Risks

Critical Risks are those that can seriously hurt or even kill us or our work mates.
They can be acute (will hurt you now), health related (could cause ill-health in the future), or catastrophic (processes that can cause widespread damage and harm).
We focus our effort ensuring the controls put in place for these risks are effective at keeping us safe.

- Mobile Plant & Equipment
- Fixed Plant & Equipment
- Hazardous Energy
- Hazardous Substances
- Psychosocial Hazards
- Confined Space
- Excavations, Trenching, & Tunnelling
- Driving
- Aggression & Violence
- Traffic Management
- Lifting Operations
- Fatigue
- Working Around & Above Water
- Working at Height

4. Introduction

Kia ora whānau

The main role of the Network Maintenance Team is to maintain and operate the drinking water, wastewater, and stormwater systems such that we provide safe and healthy water to the communities that we serve. In performing this essential role, we are faced with risks every day for example, working in and around traffic, confined spaces, and underground services.

This is why we need a health and safety system and approach- to eliminate and minimize these risks.

I'm excited to present an 'all in one place' document for our combined whānau on how we do health and safety within the Network Maintenance Team. This document has been revised with you in mind – its sole purpose is to help you work in a safe and healthy way. It describes our Health and Safety philosophy and how we go about our work.

We know good health and safety is underpinned by an engaged workforce, supportive leaders, and robust risk management practices. You - our people - are our most important asset and we need your help and support to ensure our workplace is a safe place to work so that everyone gets to go home safe and healthy.

Our partnership will help us put people first, every time, and achieve even better health and safety outcomes for us all.

I would like to acknowledge the combined efforts of both Fulton Hogan and Wellington Water Health and Safety teams in bringing this document to life. We have leveraged the collateral experience and knowledge of both organisations to get to this point, a key milestone in our journey together.

Ngā Mihi,

Andrew Harvey, Alliance Director

5. People

Our people are our most important asset, and we endeavour to create an environment where you can be your best. Wellbeing is everyone's responsibility and as a company we take your wellbeing as seriously as we take your safety. One of our values is 'Whānau'. We live this by having our people leaders across the organisation check in with their team members regularly to see how they are on a personal level. If you are not feeling your best, please speak up, we'll work with you.

There are also steps you can take to improve your wellbeing. Research shows there are five simple things you can do as part of your daily life – at work and at home – to build resilience, boost your wellbeing and lower your risk of developing mental health problems. These simple actions are known as the Five Ways to Wellbeing.

5.1 Pre-employment, Induction, Training and Competence

5.1.1 PRE-EMPLOYMENT HEALTH CHECKS

A pre-employment health assessment is done to enable compliance with the Health and Safety at Work Act 2015 and associated regulations.

The pre-employment medical is to:

- ensure you are fit to perform the tasks of the job you have applied for without putting you or anyone else at risk
- detect any pre-existing conditions that may impact on the job position
- provide base-line information for ongoing health monitoring

5.1.2 INDUCTION

All new employees, including temps, casuals, labour hire, transferring staff and subcontractors are inducted prior to commencing work.

5.1.3 TRAINING

The training needs of employees should be addressed at employment and throughout annual performance reviews. Training needs must take into account the Graduated Structure (see your manager) and be recorded and managed by the Network Maintenance Team.

INTERNAL SAFETY TRAINING

Course	Required to Attend	When?
Living Safely: Stay Safe foundation H&S training course	All staff	Within six months of starting and then five yearly. NB: Not to be run at induction sessions (if possible)
Living Safely: Frontline Leadership H&S component of the Foundational Leadership training	All Team Leaders	As part of foundational leadership training. Five-year refresher
Living Safely: Managing Safety and above Safety responsibilities and how to deliver on those	Team Leaders	Within first 12 months of becoming a manager. Five-year refresher

EXTERNAL SAFETY COMPLIANCE TRAINING

Please note that this list represents common examples and is not exhaustive. Specialist qualifications such as scaffolding are not included here

Course	Required to Attend	When?
Concrete saw	Anyone who operates or maintains a concrete saw	Prior to use
Chainsaw	Anyone who operates or maintains a chainsaw	Prior to use
Confined space and gas including unit standard for water reticulation	• Anyone who enters a confined space • Standby person for confined space entry • Anyone issuing a confined space permit	Before doing any confined space work
Fall arrest systems	Anyone working at height using fall arrest systems	Before doing work at height
Health & Safety Rep training	Elected health and safety representatives	As soon as possible after election
Lock out tag out	All staff performing isolation on equipment (beyond tagging out faulty equipment)	Prior to completing an isolation Two-year refresher

COMPETENT TO OPERATE (CTO) – HEAVY MOVING PLANT

The CTO program is a set of specific competencies mandated for the operators of certain mobile plant.

If there is a conflict of information the CTO site should be assumed to be the most up to date source of information.

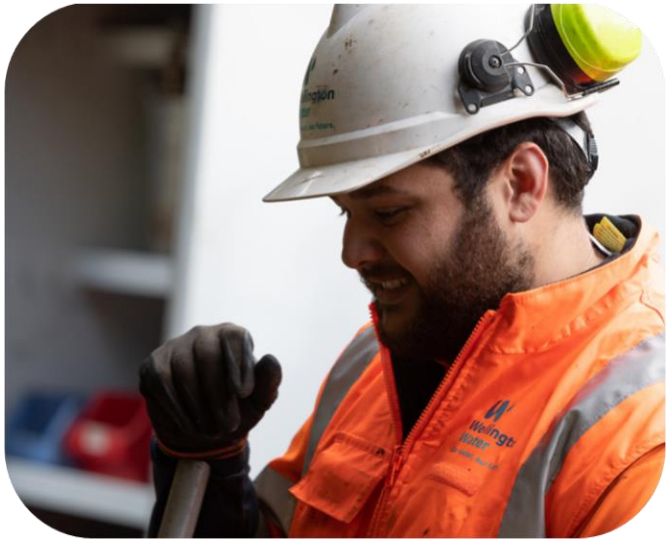
As of January 2019, the following plant types had CTO assessment requirements apply to the Network Maintenance Team:

- Excavators
- Crane
- Truck (Class 2 and above)

5.2 PPE and Clothing

The Network Maintenance Team personal protective equipment (PPE) and clothing requirements are outlined in this section of the manual. They apply to all people working on our sites. See the Personal Protective Equipment Process

These requirements represent our "minimum standard", and if our internal or external clients require a "higher" standard it must be followed.



5.2.1 RESPONSIBILITIES

We will provide all employees with the PPE required at the company's cost and ensure it complies with all relevant regulations and standards.

Workers are responsible for wearing the correct PPE for the work they are doing and for keeping it clean and in good working order. If PPE is no longer working, then report this to your manager or team leader so that it can be replaced.

Where company branded clothing is supplied it's required to be worn.

Training for PPE use will be delivered when the PPE is initially issued, e.g how to check earmuff hygiene kits and make sure PPE fits correctly.
Specialised PPE such as respiratory protection (not just a dust mask) should be fit tested by a competent person.

5.2.2 MANDATORY PPE – REQUIRED ON ALL WORKSITES AND OPERATIONAL YARDS

Steel or composite capped boots

Lace-up safety boots are required unless safety gumboots are necessary to keep feet dry. Lace- up boots must not be worn when working with asbestos.

High visibility

Day-glo safety vest, shirt, or overalls
(to be worn done up).

5.2.3 SITE PPE - WORN BY EVERYONE ON SITE

Site PPE requirements shall be assessed at the start of each day and recorded on the team's Risk Control Plan.

Factors to consider include:

- Tasks for the day
- Hazards on site

Long sleeved shirt and long pants

Required to be worn by all workers on operational sites as a default position. A risk assessment can be undertaken to wear short sleeves and shorts if other controls are put in place. This risk assessment must be documented.

Hardhat/Helmet

Required to be worn(with a chinstrap) by all workers on the site if:

- There is lifting machinery on site
- Something could fall on the worker, or the worker could fall

5.2.4 TASK PPE – TO BE WORN FOR SPECIFIC TASKS AS REQUIRED

Hearing protection

To be used if you need to raise your voice to be heard by someone 1m away.

Dust masks and respiratory protection

To be used if exposure to dust or fumes is not adequately controlled by some other means.

Gloves

To be worn for manual handling tasks, where there is a risk of hand injury and handling hazardous substances.

Gloves must not be worn where there is a risk of entanglement.

Eye protection

Must be worn when there is a risk of eye damage. There are specific tasks where eye protection is mandatory, such as using a grinder or skill saw.

See the Significant Risks section for specific instructions.

5.2.5 TASKS REQUIRING ADDITIONAL PPE

The following activities require specific PPE in addition to the requirements outlined above.

Using a Chainsaw

- An approved mesh or plastic full-face visor (over safety glasses / goggles)
- A chainsaw safety mitt
- Chainsaw chaps / trousers

Using an Angle Grinder

- A full-face visor (over safety glasses / goggles)

Using a Concrete Saw

- A full-face visor (over safety glasses / goggles)
- Leather or synthetic chaps / trousers (to provide impact protection)
- Respiratory protection (minimum half-face) unless adequate dust control measures in place e.g. on-tool extraction or water suppression)

Working with Asbestos

- Disposable coveralls (Type 5/6)*
- Half face respirator (P2 grade minimum)
- Safety gumboots (laced footwear can trap asbestos contaminated material)
- Disposable gloves

**Type 5/6* coveralls are for hazardous dusts and dry particles

5.3 Engagement, Participation, and Representation

We are committed to ensuring all employees and other workers have the opportunity to be involved in the development, implementation, monitoring and evaluation of safe work practices, including hazard identification, risk assessment and control.

The following table gives examples of employee engagement. Each business unit must agree the processes to be used in agreement with their workers.

Consultation Type	Agenda/process	Attendees
Daily pre-start meetings / risk control plan reviews	• Raise and address any safety concerns from the previous shift • Inform personnel of any areas posing a significant risk for the coming shift • Provide a forum to raise health and safety issues • Discuss daily site activities and document them on the RCP • Coordinate works and risk management	Line managers Subcontractors Employees
Opportunities for Improvement (OFI's) Paper or MyVoice	• Individuals submit OFI's for incidents, risks or improvements • Health and safety risks can be investigated and managed	All workers
Toolbox / Tailgate meetings Recommend weekly; minimum monthly	• Topics to be determined by manager/supervisor/department/project/workers • Two-way discussion	All workers
Critical Risk Conversations	• Informal and regular health and safety communication between site workers and supervisors / management • Positive reinforcement or constructive feedback • Site based	All workers
Health and Safety Representatives (HSR's)	• Represent workers in their work group in relation to health and safety • Share information / concerns from employees and other workers with managers and the safety committee • Provide feedback from safety committee meetings to the area • Assist with the development, roll out and use of health and safety risk controls and programmes / initiatives	Accessible to all in their work areas
Health and Safety Committee	• Discuss general and raised health and safety issues and agree on relevant actions • Identify and assist in the development and implementation of health and safety risk controls, safety improvements and corrective actions • A conduit for safety information	All workers
Worker Recognition	• Recognition for individual and team contributions to health and safety *for example*: quarterly health and safety awards, congratulation posters displayed on noticeboards and in toolbox/tailgate talks, on-site events such as morning teas/barbeques	Supervisors Subcontractors Consultants Suppliers Employees
Health and Safety Noticeboard	• Updates of health and safety information *for example:* toolbox/tailgate minutes, health and safety consultation committee minutes, hazard alerts, lessons learned	Accessible to all
Consult, co-operate and co-ordinate with PCBU's shared duties	Include: • Neighbours of fixed sites • Employers of other workers on the same site • PCBUs with shared access ways	Workers from all relevant work groups

5.4 Responsibilities

Refer also to Appendix 1: Accountabilities

Role	Responsibilities
• Team Leader	• General understanding of the manual and its content • Responsible for making sure that the requirements are followed on their jobs
• Manager Service Delivery and Maintenance • Head of Service Delivery and Network Maintenance	• Detailed understanding of the manual and its content • Responsible for making sure that the requirements are followed on their projects and within their divisions • Corrective action where necessary
• Alliance Director - Network Maintenance Team	• General understanding of the manual and its content • Responsible for making sure that the requirements are followed systematically on their projects and within the Region. • Corrective action where necessary to improve disciplined use • General understanding and compliance monitoring through zone health and safety managers
• Alliance Leadership Team	• Ultimate (chain of command) responsibility for content and compliance

5.5 Fit for Work / Impairment

Workers on all sites need to be fit and in the right state of mind to carry out their tasks safely

5.5.1 FATIGUE

Fatigue may be caused by work or from home life. The Network Maintenance Team is responsible to reduce, as far as practicable, the effects of work that creates fatigue and to manage the risk, at work, from other causes of fatigue. Workers are expected to take personal responsibility for being fit at work and well rested.

Our maximum acceptable work hours (in line with logbook requirements) for all workers (including subcontractors) are:

- No greater than 13 hours on duty in a 24-hour period. This includes drive time and breaks, driving to and from home, and the two mandatory half-hour breaks. NB, this can only be exceeded in emergency situations and is for exceptional circumstances only. It must be approved by the Team Leader or above
- Must give workers 24 hours' notice of any shift change
- Half an hour break required after every 5.5 hours continuous active work (driving and non-driving
- 10-hour break is required every 24-hour period
- No more than 70 hours worked in a week (stand down hours are excluded from these numbers)
- A 24-hour break is required after 7 consecutive days worked

Refer to Work time and logbooks – Minimum Standard - NZ

5.5.2 PRESCRIPTION MEDICATION

Workers on our sites are required to inform their manager or safety manager if they are on prescription medication that may affect their ability to work safely. Effects could include fatigue and altered perception.

5.5.3 DRUGS AND ALCOHOL

- **We are always drug and alcohol free when working**

The use of drugs and alcohol can impair judgement and effect coordination. It dramatically increases the likelihood of accidents and injuries. Consequently:

We are all required to be free of the effects of drugs and alcohol when working.

'Working' means the time between when we start our shift and the time we finish it, including breaks.

'Free of the effects' means below statutory or company mandated impairment levels. This rule does not prohibit the safe use of prescription medication. This rule does not prohibit responsible drinking at after work functions.

Employers and employees are required to comply with the Wellington Water Drug and Alcohol Procedure. This includes pre- employment, random, post incident and reasonable cause testing. It allows for both urine and oral fluid (swab) testing.

5.5.4 STRESS AND MENTAL ILL-HEALTH

Where a worker is identified as, or shows signs of, suffering from stress or mental health concerns, it is a joint responsibility, as a collective, to raise it with the individual or raise it with the appropriate line manager, or someone they trust.

Where this is likely to affect the worker's ability to perform their work safely, time off work or alternative (safe) duties will need to be provided.

A return to work (or remain at work) plan may be helpful and, where appropriate, this should be developed in conjunction with the treatment provider.

Our confidential Employee Assistance Programme (EAP) is available regardless of whether the cause of the stress or ill-health is work-related.

5.5.5 PERSONAL HEALTH

All staff are responsible for making sure they are fit for work. Examples include:

- Being fit to perform their role
- Not gaining weight in excess of the safe capacity of safety equipment e.g. seats, seatbelts and harnesses
- Being able to wear PPE correctly
- Wearing hearing aids if required to be able to sufficiently hear safety instructions or alarms
- Managing health conditions e.g. blood pressure, diabetes as far as possible by following the advice of a medical practitioner.

Where personal health issues affect the ability of workers to perform their role safely, we will, where practicable;

- Develop a plan to try to improve the worker's health
- Seek alternative (safe) employment within Wellington Water or Fulton Hogan

Where this is not practical or is not successful then the medical incapacity process will be initiated.

5.5.6 FACILITIES

All workers on all sites should have access to clean water, handwashing facilities and a clean toilet. This means access to facilities on site or nearby public facilities.

5.6 Health Monitoring

In the workplace some health hazards cannot be eliminated or isolated, such as dust, chemical fumes, noise or vibration. These hazards are minimised through the provision of PPE (e.g. eye protection, hearing protection, dust masks and respirators.) or through engineering controls (e.g. extraction fans).

Where PPE is required to manage a health-related risk, or where workplace monitoring levels indicate the need, then health monitoring will be provided, usually annually

5.6.1 MANDATORY REQUIREMENTS

The Alliance Health and Safety Manager must be advised of all results that require referral to another treatment provider. They must follow up on the referral process and, in consultation with the affected worker, may need to discuss safe duties with the relevant manager.

5.6.2 HEALTH MONITORING RECORDS

Health monitoring reports must be kept for 30 years for standard reports and 40 years for asbestos related monitoring. Records must be kept confidential and not disclosed to another person without the worker's written consent.

5.6.3 OPTIONAL HEATH CHECKS

- Blood Sugar- Unless fasting blood sugar tests have been done the results may not be truly indicative. Refer abnormal results to GP
- Cholesterol- Refer abnormal results to GP
- PSA- Not an approved screening test due to false positive and negative results. Suggest anyone who raises concerns also goes to GP for full health risk assessment.

Refer to Exposure and health monitoring - WorkSafe

Test:	Required for:	Referral and Notification:
Hearing checks	Workers are exposed to noise levels that are being controlled by the use of hearing protection	Evidence of noise induced hearing loss ACC claim lodgment WorkSafe notification may be required Other hearing loss patterns – refer to GP
Vision checks (Snellen or Keystone)	All drivers and mobile plant operators Suggested biennially for computer users	Refer to optician for review where eyesight has significantly deteriorated since last test
Blood pressure	All drivers and mobile plant operators	Refer to GP
Lung function	All workers exposed to dust (including wood, silica and other) All workers exposed to chemicals that could affect lung function eg. welding fumes	Evidence of reduced lung function (other than that caused by existing respiratory infection) Refer to GP or occupational physician for review May require ACC claim lodgement WorkSafe notification may be required
Skin check	Workers exposed to: • cement or concrete • diesel • other dermatitis causing chemicals	Refer to safety manager for hygiene and PPE advice. May require GP referral if sensitisation increases.
Blood tests	Organophosphate exposure	Refer to suitably qualified Occupational Health Nurse for testing May require ACC claim lodgement WorkSafe notification may be required
Fatigue questionnaire	All drivers and mobile plant operators Anyone at risk on the fatigue risk assessment	Refer concerns to safety manager. May require a referral to either a GP or a sleep specialist.
Weight	Machine Operators	Weight over 125kg – refer to Weight over 150kg may require stand-down as outside of safe weight limit

5.7 Exit Health Checks

Exit health checks are not mandatory but should be considered where workers have been in a high health-risk environment, and it has been more than six months since their last health check.

All exiting workers should complete the medical questionnaire that is part of the termination checklist process.

5.8 Vaccination

All staff physically working on the wastewater or water supply networks are strongly advised to comply with the immunisations.

Network Type	Immunisation	Frequency
Water Supply	Hepatitis A	If no antibodies present
	Hepatitis B	If no antibodies present
	Polio	Every 10 years
	Tetanus	If not up to date
Wastewater	Hepatitis A	If no antibodies present
	Hepatitis B	If no antibodies present
	Polio	Every 10 years
	Tetanus	If not up to date
	Measles, Mumps and Rubella	If not up to date
Stormwater	No specific requirements	

The following is a testing treatment and immunisation regime:

- Hepatitis A. If a blood test proves the presence of antibodies, no vaccination is required. If no antibodies are detected, immunisation using appropriate vaccine shall be carried out.
- Hepatitis B. If a blood test proves the presence of antibodies, no vaccination is required. If no antibodies are detected, three consecutive vaccinations at monthly intervals shall be administered, followed by a blood test after one month.

Workers are to immediately report the onset of any gastrointestinal illness. Such a worker is to be placed immediately on work not involving the handling of distribution components until free from diarrhoea for 48 hours, and with specific conditions (including Hepatitis A, Shigella, Typhoid, and Cholera), a medical certificate of clearance is to be obtained.

IN THE EVENT OF EXPOSURE TO POTENTIALLY INFECTIOUS WASTEWATER OR LIQUID WASTE

Seek medical advice. Even scratches and abrasions should be reported and checked due to the risk of cellulitis.

Give the treatment provider information about the potential pathogens and method of exposure e.g. "sewage exposure by inhalation or ingestion". So that they can provide appropriate prophylactic treatment and advice about symptoms.

Worker must not work in or around drinking water until symptom free for at least 48 hours; however, they can do other work tasks.

If symptoms develop then further medical advice must be sought to determine whether the symptoms are likely from the workplace exposure.

If symptoms are determined to be due to exposure from work, then WorkSafe notification must be considered, contact your Safety Manager for advice.

5.8.1 BODILY FLUIDS

Workers may be exposed to these from working in sewerage or cleaning up needles etc. as part of maintenance work. Vaccinations may be required in contract requirements; common requirements are:

- Hepatitis A
- Hepatitis B
- Typhoid
- Tetanus
- Polio

Refer to Health New Zealand Te Whatu Ora Immunisation Handbook

6. Plant and Equipment

This section of the manual explains how we manage the health and safety risks associated with the plant, machinery, equipment, and tools that we use to complete our work.

Areas covered include:

- Wellington Water or Fulton Hogan owned plant and equipment used in the Network Maintenance Team
- Contractor-owned and hired plant and equipment
- Special requirements and rules including historical red alert requirements
- Restricted use hand tools
- Driver and operator responsibilities
- Certified Safe – our mobile plant safety assurance system
- Vehicle pre-start checks
- Unsafe plant (LOTO)
- Plant design and modifications

6.1 Procurement

The potential health and safety hazards associated with the purchase of new plant or equipment shall be evaluated prior to placing a purchase order.

Any modification to plant must not cause or be a source of harm to any person, or the source is minimised as far as practicable. All changes are to be approved by the Manager Service Delivery and Maintenance.

As part of the procurement process, reference should be made to relevant NZS standards.

When considering the plant and equipment to meet operational requirements safety should also be considered e.g. noise and vibration levels produced. While "buying quiet" may be initially more expensive it will be safer for operators and will require lower levels of PPE.

6.2 Fleet – Minimum Requirements

Minimum Requirements	Cars & Utes	Trailers	Cranes	Trucks	Mobile Plant
Legal Requirements					
Registration	✓	✓	✓	✓	✓
RUCs	✓		✓	✓	✓
WOF	✓	✓			
COF			✓	✓	✓
Current crane certification			✓		
Network Maintenance Team Requirements					
Serviced	✓	✓	✓	✓	✓
Certified Safe / Plant Induction		✓	✓	✓	✓
Vehicle pre-start check (daily)		✓	✓	✓	✓

6.3 Our Fleet, Contractor Owned, and Hired Plant

All contractor-owned and hired-in plant must be inducted using the Subcontracted and Hired In Plant Minimum Requirements Checklist- NZ(refer to the Fulton Hogan Workshop) and a Plant Induction sticker attached.

Minimum Requirements	Trucks	Excavators	Cranes	Mobile Plant
Reversing alarm	✓	✓	✓	✓
Flashing Light	✓	✓	✓	✓
Seatbelts fitted	✓	✓	✓	✓
Park brake alarm (audible externally)	✓			
Swinging tail door locked out	✓	✓		
Antiburst valves fitted (Excavators > 7tn)		✓	✓	
ROPs		✓		✓
Two stage quick hitch (or pinned)		✓		
Certified lifting point		✓		✓
Vehicle pre-start check (daily)	✓	✓	✓	✓
Air compressors: Must be fitted with securing straps or double-eye, stocking-style, whip-socks to prevent the hose / pipe from flailing if it de-couples				
Nissan truck models: CG380, CG400, CK330, CM180, CW330, CW380, CW400, manufactured between 1993 and 2005 are not permitted on our sites unless these trucks have been fitted with a replacement, approved, aftermarket hand brake that complies with the heavy vehicle brake rule 32015				
Suppliers: Suppliers trucks delivering products to site are exempt from the induction process, however their onsite risks are to be managed via the Risk Control Plan.				
Trucks: A truck is classed as a heavy vehicle requiring a COF. A heavy vehicle is a vehicle with a GVM greater than 3500kg.				

6.4 Cerfitied Safe

Certified Safe is the Fulton Hogan developed, mobile plant safety assurance system. It is the Network Maintenance Team ensure that our safety requirements are in place and working.

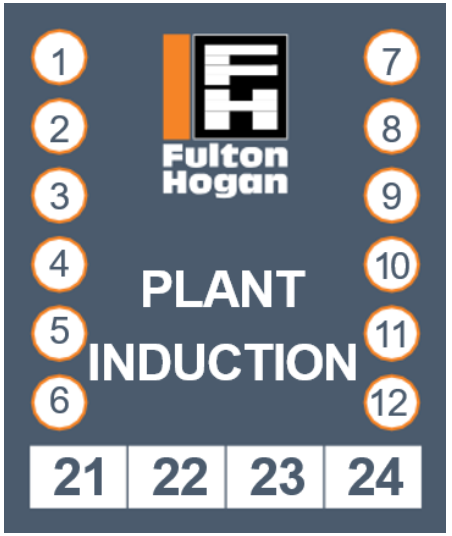
Vehicles are checked by suitably qualified mechanics periodically against a standard list of safety criteria for each plant type.

The Fulton Hogan NZ mechanical engineer has delegated responsibility for the Certified Safe programme and, in conjunction with the NZ health and safety team will:

- Determine the nature and frequency of the checks required
- Monitor compliance
- Review the suitability of the checklists taking into account changes to available technology and industry standards
- Ensure that those authorised to issue Certified Safe endorsements are competent to do so

Cars and utilities are not included in the Certified Safe programme.

Subbie owned plant must be inducted to site and display a current induction sticker.
If not, it must be tagged out until induction checks have been completed.



6.5 Special Requirements and Rules

The following requirements and rules are in the process of being implemented into the Network Maintenance Team.

Item	Requirement	Reason
Chain hoists	Elephant brand of chain hoists not permitted	Red Alert: 1711/02
Parking on slopes	Drivers should stay in their cabs unless they have an important reason to be out of them (such as checking trips, cleaning drawbars etc.) Apply safe parking practices (handbrake on, truck in gear, wheels pointing into the kerb when downhill and away from the kerb when uphill)	Red Alert 20-001
Tractor and ride on mowers	Owned by us or used by contractors on our behalf must be fitted with chain curtains or some other discharge protection	CEO Instruction, May 2016
Ride-on mowers	Owned by us or used by contractors on our behalf must be fitted with ROPs and seatbelts	CEO endorsed Moving Plant requirement February 2015
Chain clutches	All shortening clutches must be replaced with yoke pinlock grab hooks	Red Alert: 1507/003
Load binders	Ratchet binders preferred, recoilless twitches permitted, lever type load binders banned	Red Alert: 1505/001
Waratah installation	Purpose-built waratah rammers to be used	Red Alert: 1406/003
Pneumatic hoses	Securing straps or double-eye, stocking-style, whip-socks to be used to prevent the hose / pipe from flailing if it de-couples	Red Alert: 1405/002.2 Pneumatic Hose Restraint - Standard - NZ
Quad bikes	Not to be used by anyone (including contractors) working for Fulton Hogan	CEO Instruction, October 2012
Truck and trailer covers	Truck and trailers built after January 2013 are to have ground- operated manual covers	CEO Instruction, October 2012
Gas welding bottles	All oxygen and acetylene gauges and hand controls must have flashback arresters fitted on both ends of leads	Red Alert: 10/006
Electrical tagging and testing	Workshops / Construction sites - every six months Manufacturing and contracting sites – annually Office environments – every five years	AS/NZS 3760:2010
"Lock on" power tools	Powered tools should be "hold to run", so they stop if the trigger is released	Red Alert REDNZ 19-006
Swinging tailgates	Eliminate swinging tailgates unless absolutely essential. Must have two locking mechanisms and a dashboard alarm	Swinging tailgates
Excavator bucket security	Spare buckets must be secured during transport. Where spare buckets are carried by stacking inside a bucket, that bucket must have holes in each end wall so that an appropriately rated load binder can be fitted and tightened to fully secure all buckets together	Moving Plant Safety Essential - Digger buckets

6.6 Restricted Use Tools

Tool	Use Restricted To	Verification
Chainsaws	Network Maintenance Team employees: Those who have completed an approved the basic chainsaw operation course within last five years Contractors: Those who have provided evidence to verify their competence	Fulton Hogan - Skills View Wellington Water – Te Akau Examples may include: training completed, relevant experience, referee endorsements
Concrete saws	Network Maintenance Team employees: Those who have completed an approved the basic concrete saw operation course within last 5 years Contractors: Those who have provided evidence to verify their competence	Fulton Hogan - Skills View Wellington Water – Te Akau Examples may include: training completed, relevant experience, referee endorsements
Grinders	Network Maintenance Team employees: Those who have complete small tools training within the last five years" to "Those who have complete the on the job training form with their Team Leader or Manager and been briefed on the Water Ways guide for grinders This requirement came into effect on 1 July 2019 Contractors: Those who have provided evidence to verify their competence	Fulton Hogan - Skills View Wellington Water – Te Akau Examples may include: training completed, relevant experience, referee endorsements
Nail guns	Network Maintenance Team employees: Those who have complete small tools training within the last five years" to "Those who have complete the on the job training form with their Team Leader or Manager and been briefed on the Water Ways guide for grinders This requirement came into effect on 1 July 2019 Contractors: Those who have provided evidence to verify their competence	Fulton Hogan - Skills View Wellington Water – Te Akau Examples may include: training completed, relevant experience, referee endorsements
Powder actuated tools (e.g. ramset guns)	All Operators: holding a Certificate of Competency relating to the make of tool being used.	Fulton Hogan - Skills View Wellington Water – Te Akau Sight qualification for subcontractor

6.7 Calibration Requirements

Team Leaders shall ensure that any equipment that is used for the inspection, measuring and testing to demonstrate the conformance of product or work to the specified requirements is calibrated. Calibrations should be carried out at the appropriate intervals and where practical calibrations are tested in line with a recognised standard.

Items requiring calibration may include: Testing apparatus, survey equipment, safety equipment, electrical equipment, chains / lifting equipment.

Any equipment that has failed a calibration test or is in poor condition should be repaired or replaced as necessary

Records must be saved.

6.8 Drones/Unmanned Aerial Vehicles (UAV's)

There are a few key things to consider if you're required to use a drone as part of your work or have one working on your sites. Unless the pilot is specifically registered on either home organisation's Part 102 Certification (or is an approved contractor), then flying must be done within the limits and restrictions of Part 101 rules and regulations.

6.8.1 UNDERSTANDING THE LAW

- A drone is an aircraft, and the operator is a pilot – Civil Aviation rules apply
- Drone pilots must be able to demonstrate a comprehensive understanding of Civil Aviation Rules Parts 101 and 102
- Approved training providers can be found at: www.caa.govt.nz/drones
- For more advice contact Fulton Hogan's Chief Pilot

6.8.2 CONSIDER OTHERS

- Always keep a safe distance away from people, plant, buildings and roads
- An owner's permission is required before flying over private land
- Always keep the drone in sight
- If you see another aircraft stay well clear of it and land immediately

6.8.3 KNOW THE NO-FLY ZONES

- Stay 4km away from any airport
- Fly no higher than 120m above the ground
- Keep well clear of no-fly zones and controlled airspaces A map of these can be found at: www.airshare.co.nz

6.8.4 PRE-FLIGHT CHECKLIST

- Check the tech – battery and drone
- Scan the land – people, animals, power lines (you may need a close approach permit)
- Eyes on the drone – keep it in sight, fly no higher than 120m
- Check for no-fly zones – know where you're allowed to fly
- Be ready to land – if you see another aircraft

6.9 All Other Plant, Machinery, Equipment & Tools

It's not practical to cover all items of equipment that we use here.

Every item of plant and equipment comes with a level of risk and, where there's a significant risk of injury or harm, we have a responsibility to:

- Discuss the risk and likely controls at pre-shift tailgate meetings
- Note the agreed controls on our risk control plans (RCPs)

6.9.1 JET FLUSHERS

There are few things we must ensure are in place when using jet flushers on our sites, when using a subcontractor for jet flushing, training and competence will be covered by their systems and procedures.

- Assessment of training and competence
- Pre-start checks

Team Leaders must complete training, which consists of going through the standard operating procedure for jet flusher use, the operator's manual for the unit being used and the associated pre-start checklist. The team leader will then require the trainee to complete an RCP for the task, complete the jet flusher pre-start checklist and begin operations, the team leader will assess if the trainee can complete works with or without supervision and then complete the jet flusher training and competence register.

Pre-start checks must be complete daily and will cover items specific to jet flusher units, normal pre-starts for the flusher truck will still need to be completed.

6.10 Driver and Operators – Minimum Requirements

Anyone operating vehicles, plant, or equipment while working for the Network Maintenance Team or a Network Maintenance Team worksites must, as a minimum requirement:

- Have the licences required
- Be competent to complete the tasks assigned to them
- Be fit for work
- Have participated in a risk assessment process at the start of the shift
- Have completed the required pre-start checks
- Comply with all relevant legal requirements
- Follow any site rules
- Comply with the Life Saving Actions and Rules

6.11 Vehicle Pre-start Checks

Completed daily.

- Apply to all plant items that have a WoF, CoF, or registration
- Not required for single operator cars or utilities vehicles

6.12 Lock Out Tag Out (LOTO)

Applies whenever plant or equipment is being serviced, maintained, repaired or when any guard needs to be removed for cleaning.

Does not apply to:

- work on powered equipment where the energy can be removed by unplugging the equipment and cannot be turned back on without the knowledge of the staff member concerned.
- the normal use of equipment e.g. changing the tool attached to an air hose.

6.13 Plant Design and Modifications

Applies to:

- design and build of plant including associated systems*
- modifications to plant or attachments
- use of non-manufacturer approved attachments.
- modifications to systems e.g. electrical, hydraulic, and pneumatic

**Associated systems* mean electrical, hydraulic, pneumatic, ventilation and any other system including the supply and distribution components that is fundamental to plant operation and safety.

This process should be followed for alterations to plant that are:

- Lifting
- Towing
- Restraining
- Pressurised
- Structural

Does not apply to:

- Routine maintenance, repair, or use of manufacturer approved attachments, unless there is a change to the function / performance of the system

Applies regardless:

- If done by Fulton Hogan, for the purpose of the NMT or contracted out.

Risk assessment of proposed modifications or design of new plant or attachments should consider health, safety and environmental risks that are changed, controlled, or created.

These requirements apply whether the build or modifications are for internal use or for an external customer.

6.13.1 BUILDING AND DESIGN OF PLANT AND EQUIPMENT

We are responsible for ensuring that plant designed and / or built, for the purpose of the NMT, meets the requirements of the Health and Safety at Work Act 2015, all relevant NZ Standards, and any statutory certification requirements such as land transport rules and electrical safety regulations.

The design process must include:

- Development of a preliminary design and/or scope for review
- Risk assessment of safety, environmental and compliance requirements
- Identification of applicable standards and certification, (refer to safety manager, engineer, electricians or other professionals as required)
- Assessment of applicable requirements

7. Risk Management

7.1 Managing Risk

This section of our Living Safely Manual outlines our minimum risk management requirements. It can be applied to the management of health, safety, quality and environmental (HSQE) risks and is applicable to employees who are involved in any of the following activities:

- Designing, tendering, or planning work
- Managing, supervising, or completing work
- Designing, specifying, modifying, maintaining or building plant, equipment and attachments

7.1.1 RESPONSIBILITIES

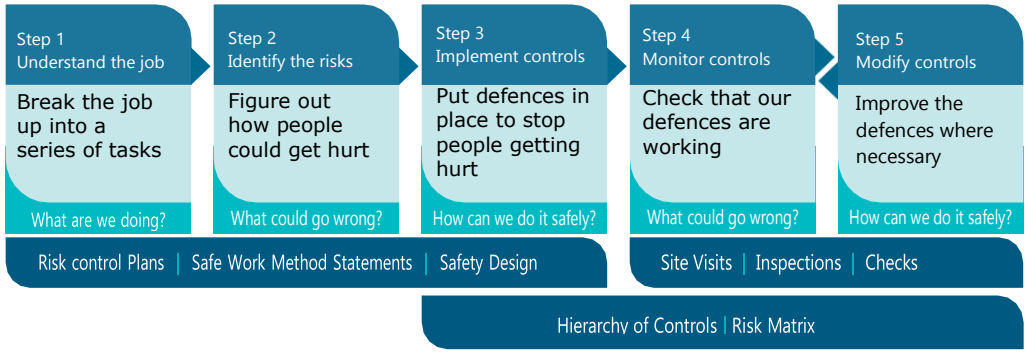
The table below allocates risk management responsibilities for the various phases of work.

Phase	Who	Responsible for	Consult With	When
Designing, tendering, or planning	Designer	Minimising construction and operational HSQE risk through good design	Constructors, Maintainers, Future users	During design
	Manager Supervisor	• Identifying HSQE risks during tendering • Considering the cost of controls in the tender price • Communicating any identified risks and controls to the project manager Planning work in such a way that: • HSQE risks are reduced • Sufficient time and resources are allocated to managing risks	Supervisor Physical works teams	Before physical work begins
Managing, supervising, or completing work	Manager	Checking that site and construction HSQE risks have been identified and effectively controlled	Supervisors and physical works teams	As often as the risk requires
	Manager Supervisor	Checking that site and construction HSQE risks have been identified and effectively controlled	Project manager and physical works teams	As often as risk requires and whenever on site
	Manager Supervisor	Identifying and effectively controlling site and construction HSQE risks	Construction teams	Daily and after significant change

7.1.2 MANAGING HSQR RISK

This is how we manage health, safety, quality, and environmental risk.

To apply this model to quality or environmental risk, substitute the word 'people' in steps 2 and 3 with the words 'quality' or 'the environment'.



7.1.3 MANAGING RISK - SAFETY IN DESIGN (PLANNING OPPORTUNITIES)

Many health and safety risks can be avoided by careful planning at the design stage. These are "upstream" duties and provide the best opportunity to design out a risk (or design in a control).

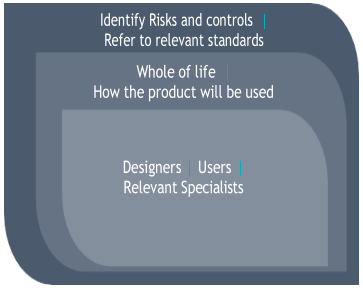
'Health and safety by design' is the process of managing health and safety risks throughout the lifecycle of structures, plant, substance or other products. Designers are in a strong position to make work healthy and safe from the start of the design process. Health and safety by design is not a separate concept from good design – they are the same thing.

Refer to Health and Safety by Design - WorkSafe

Once the criteria for the product being designed is understood, design can consider the hierarchy of controls for the whole life of the product. This should include building, maintenance, repair, and eventually, disposal / demolition. For plant design, the intended purpose and use must also be considered, as well as guarding or structural requirements.

Human factors of ease of use, understanding of operator controls and displays, must also be considered; an ergonomist may need to be consulted for advice.

While there may be known industry standards for managing a risk, consideration should also be given to new approaches and technology. Further risk assessment may be required for novel challenges and solutions



7.1.4 MANAGING RISK USING RISK CONTROL PLANS (RCP) - STEPS 1-3

Risk Control Plans are used to manage risk associated with standard, routine activities. They guide work teams through a risk management discussion.

Key points follow:

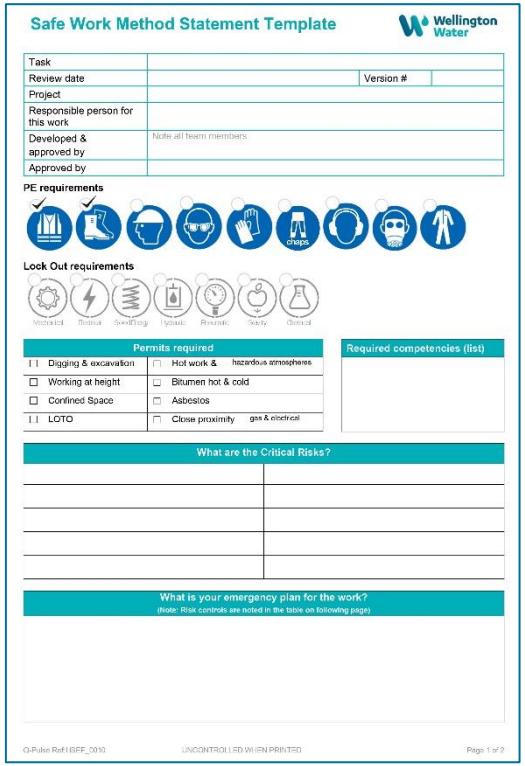
- Wherever possible, all workers involved in a job shall meet on site at the beginning of each shift to discuss the work plan, likely risks, and how they will control those risks.
- A summary of this discussion shall be recorded on the Risk Control Plan
- Health, safety, quality, and environmental risks are all to be considered.
- Later arriving staff and visitors are to be taken through the risk control plan by the senior person on site when they arrive.
- All practicable steps must be taken to eliminate risk before controls that minimise risk are considered.
- A new Risk Control Plan is required for every new job and at the beginning of each week. Note: an RCP can be used for multiple jobs through the course of the day, if they have the same risks and controls and don't involve excavating or any permitted works
- For sites where the work will take longer than one day, the Risk Control Plan must be discussed, reviewed, and updated at the beginning of each shift. It should also be reviewed following a significant change in scope or methodology.
- The magnitude of identified risks is determined using the risk rating chart discussed below.
- If the residual risk (after controls) is 'high' or 'extreme' then work must stop, and the methodology must be reviewed with the responsible manager.

7.1.5 MANAGING RISK USING SAFE WORK METHOD STATEMENTS (SWMS) - (STEPS 1 - 3)

Safe Work Method Statement Template outline a safe method of work for a specific activity.

They are used to manage unique and complex tasks that require a more detailed risk management approach.

They are not generic documents.



Key points follow:

- As far as possible the staff involved in any job requiring a SWMS must be involved in its preparation.
- The SWMS must be developed well before any physical work begins.

- The SWMS shall break the job down into manageable tasks, identify the risks associated with each task and detail the controls necessary to manage each risk
- Health, safety, quality and environmental risks are all to be considered
- All practicable steps must be taken to eliminate risk before consideration is given to controls that minimise risk
- The SWMS shall record the process to be followed to monitor the effectiveness of the controls and actions to be taken if additional controls are required
- The SWMS is to be peer reviewed, and approved by the job manager's manager
- It is to be discussed in detail with the work team at the start of each shift and a record of that discussion is to be recorded on the Risk Control Plan
- Later arriving staff and visitors are to be taken through the SWMS by the senior person on site when they arrive
- If the residual risk (after controls) is 'high' or 'extreme', work is to stop and the methodology is to be reviewed with the responsible manager

7.1.6 QUANTIFYING THE RISK USING THE RISK MATRIX – STEPS 3-5

The risk matrix is used to quantify the level of risk.

Key points follow:

- The risk level is a combination of the potential consequences (should the risk eventuate) and the likelihood of the event and those consequences occurring
- If the residual risk (after controls) is 'high' or 'extreme' then work must stop, and the methodology is to be reviewed with the responsible manager
- If the residual risk after the controls have been implemented is 'medium' or 'low' then work can proceed

Risk Type	Potential Consequence				
	Insignificant	**Minor**	**Significant**	**Major**	**Catastrophic**
Health and Safety	No treatment required	First Aid Treatment Injury	Medical Treatment Injury (MTI) OR Restricted Work Injury OR Lost Time Injury (LTI) 3 days or less	Lost Time Injury (LTI) 4 days or more OR	Fatality OR Permanent disability
Environment	No impact on or off site	On-site impact requiring routine internal remediation	Off-site impact requiring internal remediation OR on-site impact requiring substantial internal remediation	Impact on- or off-site requiring specialist external remediation	Impact on- or off-site with long term effect OR requiring immediate external response
Quality	Accept as is OR Audit	Minor Audit Finding (NCR)	Major Audit Finding (NCR)	Critical Audit Finding (NCR) OR Accreditation warning	Loss of accreditation
Cost (Remedials, Plant or Property)	Less than $1000	$1,000 to $10,000	$10,000 to $25,0000	$25,000 to $100,000	Greater than $100,000
Community and Reputation	No community complaints	Isolated community complaint	Repeat community complaints OR negative local media	Frequent community complaints OR negative regional media OR Negative Social Media	Organized community opposition OR negative national media OR Viral Negative Social Media
Regulatory	Notified / no response or Verbal directive	Verbal Warning / No Response Required	Written Warning / Cost Recovery / Response Required / Improvement Notice	Abatement Notice / Infringement Notice / Prohibition Notice	Prosecution / Enforcement Order
Business Interruption	No interruption to work	Work interrupted	Temporary site closure (less than a day)	Temporary site closure (more than a day)	Permanent site closure or eviction

Likelihood	Consequence				
	Insignificant	Minor	Significant	Major	Catastrophic
Almost Certain (expected to occur in most circumstances)	Moderate (100)- 11	High (500)- 16	High (1000)- 20	Extreme (5000)- 23	Extreme (10000)- 25
Likely (probably occur in most circumstances)	Moderate (50)- 7	Moderate (250)- 12	High (500)- 17	High (2500)- 21	Extreme (5000)- 24
Possible (expected to occur at some time)	Low (10)- 4	Moderate (50)- 8	Moderate (100)- 13	High (500)- 18	High (1000)- 22
Unlikely (Could occur at some time)	Low (5)- 2	Low (25)- 5	Moderate (50)- 9	Moderate (250)- 14	High (500)- 19
Rare (may occur in exceptional circumstances)	Low (1)- 1	Low (5)- 3	Low (10)- 6	Moderate (50)- 10	Moderate (100)- 15

Risk Level	Score WW	Score FH	Parameters
	2501- 10000	23- 25	If the post-control risk is EXTREME the activity MUST NOT proceed. Elimination, substitution, isolation and/or engineering controls must be put in place to reduce the risk rating to LOW or MEDIUM
	251- 2500	16- 22	If the post-control risk is High, the activity MUST NOT proceed. Alternate controls must be put in place to reduce the risk rating to LOW or MEDIUM
	26 - 250	7 - 15	The activity can proceed so long as the highest level and most appropriate risk control measures have been identified and implemented
	1- 25	1- 6	Activity may proceed with normal supervision after implementing control measures

7.1.7 IDENTIFYING EFFECTIVE CONTROLS USING THE HIERARCHY OF CONTROLS - STEPS 3-5

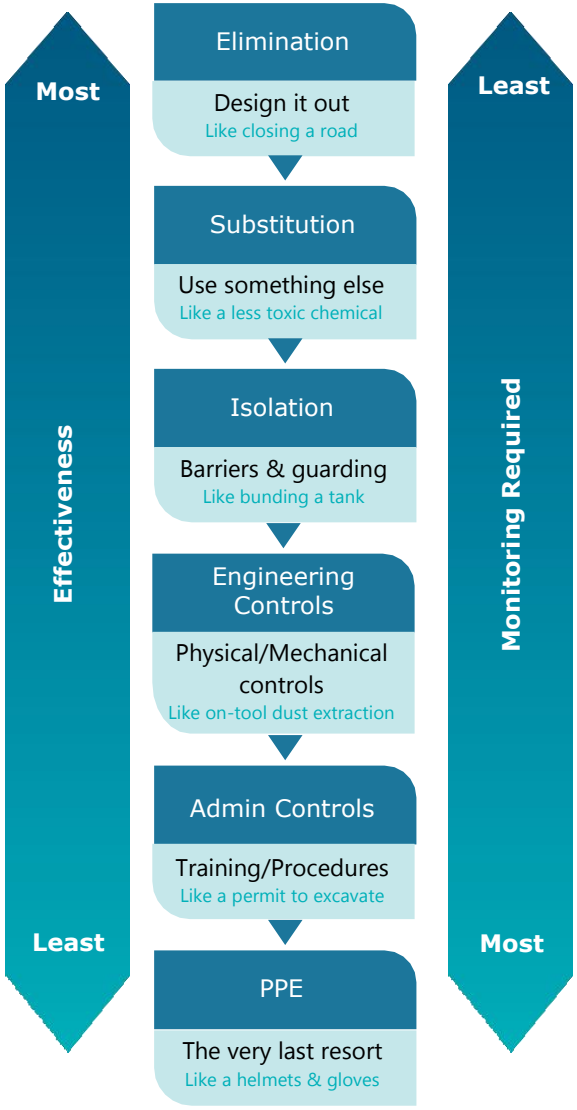
We put controls in place to protect people from risk.

As we work through our 'Risk Control Plans' or our 'Safe Work Method Statements', it's important that we look to implement the most effective controls possible, before we consider less effective options.

Key points follow:

- This hierarchy of controls is enshrined in New Zealand's health and safety legislation
- It can be applied equally to health, safety, quality, or environmental risks
- When determining controls start at the top of the hierarchy and work systematically through the following six levels:
  - First do everything practicable to eliminate the risk
  - If is not feasible to eliminate the risk, consider how the methodology might be substituted to reduce the risk
  - If it is not possible to eliminate the risk, or change the methodology, then isolate people (or the environment) from the hazard
  - Next, consider engineering controls that will protect people from the hazard. Only after confirming that all practical options to install 'above the-line controls' have been exhausted should controls below-the-line be considered
  - Consider administration controls but please note: While processes and procedures can be used to guide human behaviour and decision making, they cannot be relied upon to control it
  - Finally, the PPE required for the task should be determined and used. This really is the last line of defence
- Several layers of controls may typically be applied to manage a single risk. For example: barriers may be used to isolate people from a traffic risk in conjunction with training (an administrative control) and high visibility clothing (a PPE control)

HIERARCHY OF CONTROLS



7.1.8 MONITORING THE EFFECTIVENESS OF CONTROLS – SITE VISITS AND INSPECTIONS

All workers on site should consider whether or not controls are working throughout the workday. For example, fences may get moved (by people or wind), and traffic volumes may fluctuate. Leaders are expected to complete Critical Risk Conversations on site.

Refer to the Monitoring section for formal auditing requirements.

7.2 Life Saving Actions and Rules

The Life Saving Actions and Rules have been developed to :

- prevent life threatening injuries
- be simple and easy to follow
- linked to critical risks (the things that can kill us)

The Life Saving Actions and Rules have been put together as part of our commitment to protecting people from serious injuries, and everyone who works for the Network Maintenance Team has a personal responsibility to follow them. They help control some of the most significant risks our people are exposed to.

The Actions and Rules must be applied fairly and consistently across the Network Maintenance Team. Subcontractors are also required to comply with these when working on our sites.

Our Life Saving Actions and Rules prevent life-changing injuries. Breaches quite literally put lives at risk.

We investigate every breach of a Life Saving Action/Rule. The investigation will consider whether managers, supervisors or other people on site were involved in the breach in any way.

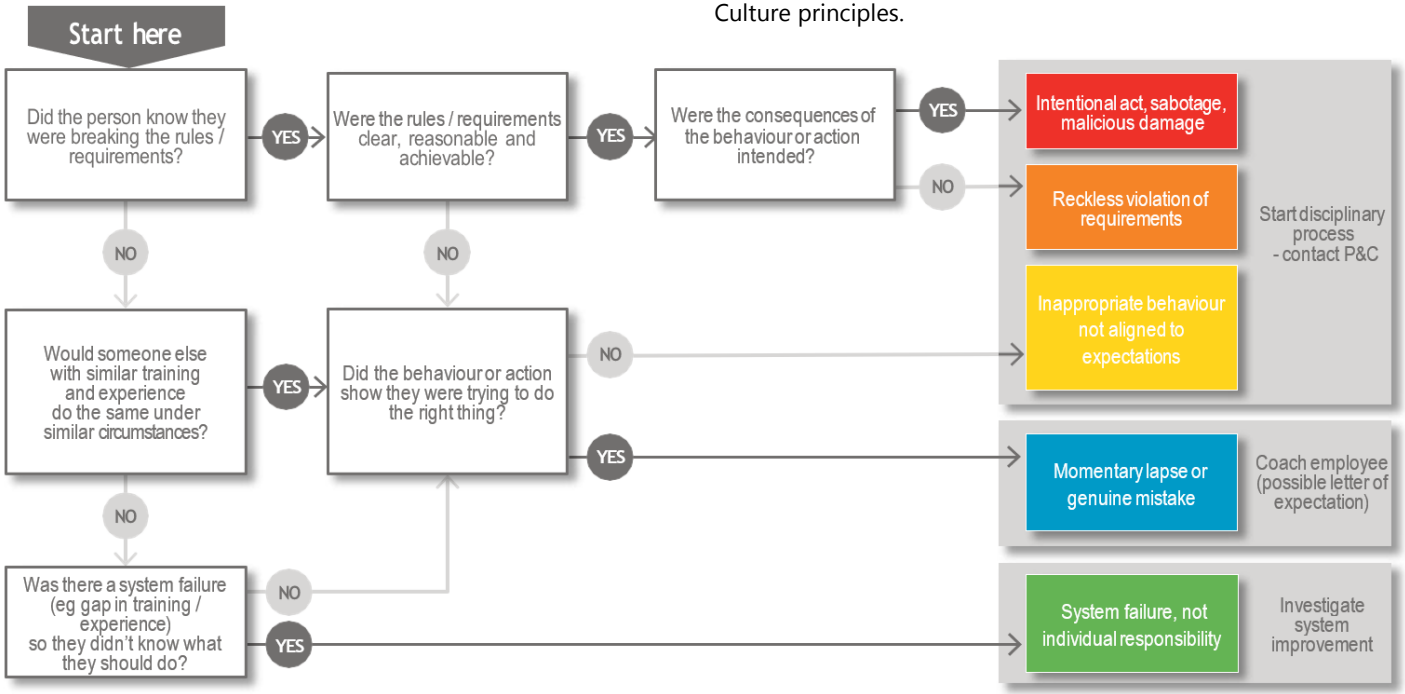
We take disciplinary action in line with our Just Culture principles. Intentional and reckless breaches cannot be tolerated and will most often bring the employment relationship to an end. Being a "good fella" is not a defence.

7.3 States of Error

There are some states of being that increase the chances of people making an error that can lead to an incident. They are known as States of Error and are:

- Rushing
- Frustrated
- Tired
- Complacent
- Distracted

These factors need to be considered when applying the Just Culture principles.



7.4 Other Safety Rules

- Vehicles shall be parked so they can drive out of the park without the need to reverse (unless there is a practical reason not to do this – e.g. angled parking
- Craft knives are not ban but other cutting tools should be provided where practical
- Day time running lights are not mandatory
- Grinders are only to be used where no other tool is practical, and the operator is competent

7.5 Permits

- Permits are to manage certain high-risk activities in conjunction with our primary risk management tool, the risk control plan
- Self-issue permits can be issued to yourself, dual issue permits require a permit issuer and receive
- Self-issue permits do not require permit issuer training; they can be completed by operators with suitable operational experience and competency. Dual issue permits should be issued by an approved permit issuer
- All permit related documents can be found on Woogle

Permit	Self-Issue	Dual-Issue	External
Digging and excavation	✓	✓	
Work at height	✓		
Hot & hazardous atmosphere work	✓	✓	
Confined space entry		✓	
Asbestos work	✓	✓	
Temporary works		✓	
Lock out Tag out		✓	
Close proximity			✓
Kiwi Rail			✓

- **We are always do a permit when required**
- **We always follow the permit process when a permit is required**

A Permit to Work and Regulator notifications are required for various work activities. These checks help us ensure that our work is carried out in a safe manner.

Where a permit is required, it must be issued, and the controls effectively deployed, before any work begins. The permit must be complied with for the duration of the works.

This Life Saving rule has been deliberately written to include external permits required by other authorities. This includes

- Working in the rail corridor
- Working in close proximity to power lines
- WorkSafe Notifiable work.

To put it simply – where a permit is required, we must have one and we must follow it.

NB: This Life Saving Action and rule helps protect us from a number of other significant risks that fall outside our normal Risk Groups.

7.5.1 PERMIT NUMBERING – FIXED SITES

Fixed sites must maintain a permit register or equivalent system to allow all open permits to be identified. This ensures maintenance work does not start without reviewing all other permits already in place that might affect existing safety systems.

7.5.2 PERMIT NUMBERING – MOBILE SITES

Regions or projects may choose to run a central permit register- in which case, all permits need to be recorded there. Otherwise, permits should be identified by using the format "job number / date" to allow all permits issued in relation to a job to be tracked as part of the job folder information. Where multiple permits are issued on one day use the format "job number / date / 1" etc.

7.5.3 DIGGING AND EXCAVATION

DO I NEED THIS PERMIT?

Yes:

- Whenever we are digging, penetrating, or disturbing the soil e.g. installing posts or waratahs etc
- When we plan to be digging deeper than 1.5m

No:

- When replacing like-for-like road furniture e.g. marker posts
- After major earthworks have been completed and we are certain all services have been removed or confirmed as absent
- If Hydroexcavating **ONLY** - no hand digging at any stage of the job

In these situations, the risk control plan must be used to manage any risk of underground services.

IS WORKSAFE NOTIFICATION REQUIRED?

Yes:

- If work in any drive, excavation or heading in which any person is required to work with a ground cover overhead
- If work in any excavation in which any face has a vertical height of more than 1.5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical
- If work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 metres deep and that is deeper than it is wide

WHAT ELSE MIGHT I NEED?

You might need a confined space permit if there is a risk of flooding, or you're using petrol/diesel powered equipment in or around the trench (e.g. plate compactors or excavators). Use "Am I a confined space?" tool and if there is any doubt, use a gas detector while in the trench. If the alarm sounds, the work should stop until other controls are added (for example, electric tools, ventilation and/or confined space procedure).

You will need an approved service locating device and someone who is trained & competent to use it.

7.5.4 WORK AT HEIGHT

DO I NEED THIS PERMIT?

Yes:

- When the risk of falling e.g. between levels; falling from, falling off or falling in, has not been engineered out (unless it's a low-risk task as described below)
- Where fall restraint or fall arrest equipment is (or should be) in use
- When working from a ladder for longer than 10mins above 1.5m

No:

- If using a scissor lift (with appropriate training)Using an electrical bucket truck for routine works (with appropriate training)
- If working behind suitable edge protection or from a complete scaffold platform
- If carrying out low risk short duration work (i.e. tasks completed in less than 10 minutes) from a ladder
- When loading and unloading plant or working on truck decks

IS WORKSAFE NOTIFICATION REQUIRED?

Yes:

- When erecting or dismantling scaffolding with a risk of falling 5 metres or more
- For construction work with a risk of falling 5 metres or more, unless it meets the exclusions below

No:

- If the work is in connection with a residential building up to and including 2 full storeys

- If the work is on overhead telecommunications lines and overhead electric power lines
- If the work is carried out from a ladder only
- If maintenance and repair work are of a minor or routine nature

WHAT ELSE MIGHT I NEED?

You may need a more detailed rescue / emergency plan than the template in the permit. For example, work in a remote location, or very technical height work.

7.5.5 CONFINED SPACES

WorkSafe notes the following as examples of confined spaces: Storage tanks, tank cars, process vessels, boilers, silos, pits, pipes, sewers, shafts, ducts, and shipboard spaces.

- Restricted access space entry still requires at least one person present who is confined space trained (so they know what to do if something changes)
- Confined space permits must be signed off by someone who has had confined space entry training
- Everyone entering the space, and the standby person must also have current confined space entry training

IS WORKSAFE NOTIFICATION REQUIRED?

Yes:

- If a breathing apparatus is required.

WHAT ELSE DO I NEED?

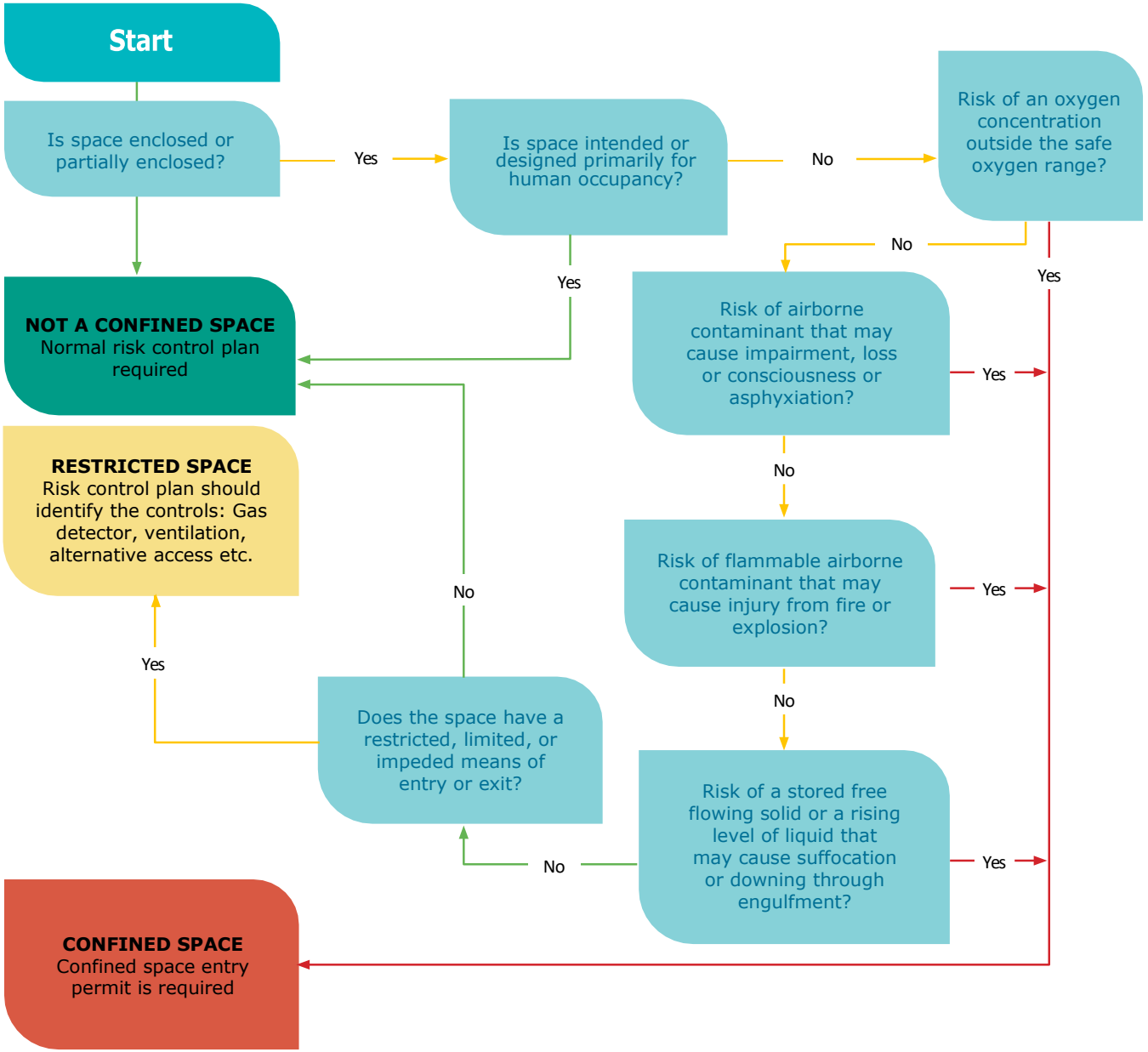
You will need:

- A standby person and agreed communication method
- An emergency plan and appropriate rescue equipment
- Gas detector/s
- Training appropriate for breathing apparatus (if being used)

If working in a restricted space and the gas detector alarm sounds or there are any close calls related to the space, then work must stop, and a confined space permit worked through.

DO I NEED THIS PERMIT?

Work through the flowchart "Am I a Confined Space?".



7.5.6 HOT WORK (including hazardous atmospheres)

DO I NEED THIS PERMIT?

Yes:

- If you are doing work that creates a risk of ignition from sparks (e.g. grinding, welding, thermal cutting, creation of static or live electrical work) or heat
- When there is a risk from a hazardous atmosphere the first stage is required e.g. flammable gases or fumes, the second stage of the permit is for general hot work

No:

- If you're in an approved hot work area
- If you are certain there is nothing within your work area that could catch fire or explode
- If it is part of the normal operation
- If you are jump starting a vehicle using appropriate tools and techniques

IS WORKSAFE NOTIFICATION REQUIRED?

No

WHAT ELSE DO I NEED?

You may need a fire extinguisher appropriate to the work being done. Services due annually, pressure checks 5 yearly.

7.5.7 ASBESTOS WORK

There are permits covering:

- Unlicensed Asbestos removal work
- Licensed Asbestos removal work

DO I NEED ONE OF THESE PERMITS?

Yes:

- When the work involves disturbing (including removal of) any asbestos or asbestos containing materials (ACM).

When removing >10m2 (over the entire project) of non-friable asbestos containing material, or any quantity of friable asbestos a competent asbestos removal contractor must be brought in.

Work Involving Asbestos

Asbestos-Related Work

- Research & analysis
- Sampling & identification
- Transport & disposal
- Demonstrations, education or practical training
- Response to an emergency
- Demolition
- Firefighting
- Maintenance & servicing work
- Rectifying work
- Display of an artifact or thing
- Mining
- Laundering asbestos-contaminated clothing
- Naturally occurring asbestos
- Work carried out in accordance with as approved method

MIN REQUIRED TRAINING: Asbestos Awareness

REQUIRED PERMIT: Asbestos Related work permit

Asbestos Removal Work

Unlicensed Asbestos Removal

- Removing 10m2 or less of non-friable asbestos & associated asbestos-contaminated dust (ACD)
- Removing ACD not associated with the removal of friable or non-friable asbestos & is only a minor contaminant

MIN REQUIRED TRAINING: Asbestos Awareness

REQUIRED PERMIT: Unlicensed Asbestos Work

Licensed asbestos removal
WORKSAFE NOTIFIABLE

Class B

- Any amount of non-friable asbestos or ACM
- ACD associated with removing non-friable asbestos or ACM

MIN REQUIRED TRAINING: NZ Unit Standard 29765

Class A

- Any amount of friable asbestos or ACM
- Any amount of ACM
- Any amount of non-friable asbestos or ACM

MIN REQUIRED TRAINING: NZ Unit Standard 29766

7.5.8 TEMPORARY WORKS

Temporary works are defined as parts of the works that allow or enable construction to, protect, support, or provide access to, the permanent works and which might or might not remain in place at the completion of the works.

Includes:

- Propping
- Scaffolding
- Formwork and falsework
- Temporary walkways
- Trench shoring systems
- Temporary platform
- Retention systems
- Granular platforms i.e. crane pads

An engineer must be consulted regarding any temporary works.

TEMPORARY WORKS DESIGN/VERIFICATION

Minimum Level of Design & Verification Required		Consequences of failure risk (see table)			
		Minor	**Significant**	**Major**	**Catastrophic**
Design Complexity Risk (See table)	Highly complex & innovative	D2-V3	D2-V3	D3-V3	D3-V3
	Complex	D2-V3	D2-V3	D2-V3	D3-V3
	Simple	D2-V2	D2-V2	D2-V3*	D2-V3
	Basic	D1-V1	D1-V1	D1-V1	D1-V1

*D2-V2 for excavations carried out in accordance with the WorkSafe Good Practice Guidelines

Minimum level of design required:
D1 Designed by experienced competent site team using past experience D2
D2 Designed by suitably qualified / competent engineer
D3 Designed by chartered engineer CPEng

7.5.9 KIWIRAIL PERMIT – EXTERNAL

DO I NEED THIS PERMIT?

Yes:

- If you are working within 5m of the outermost rail

IS WORKSAFE NOTIFICATION REQUIRED?

No

WHAT ELSE DO I NEED?

You will need a rail protection officer (RPO)

7.5.10 CLOSE APPROACH PERMIT – EXTERNAL

DO I NEED THIS PERMIT?

Yes:

- When working within 4m of overhead lines
- When digging within 5m of a power pole

IS WORKSAFE NOTIFICATION REQUIRED?

No

8. Significant Safety Risks

8.1 Moving Plant

This relates to the movement, usage, and condition of plant including trucks, loaders, excavators, and related attachments such as trailers.

Three Life Saving Actions and Rules apply to moving plant:

- **We always plan for and observe exclusion zones**
- **We always keep ourselves and others away from machinery when we don't need to be near it**

Too many of our reported safety incidents involve fixed and moving plant. Further, our fatal accident history is dominated by accidents involving both moving plant and traffic management.

Crush injuries, resulting from collisions between plant and people, are one of the most significant risks faced by our people. These injuries are very serious and can be life threatening.

Adequate separation between people and machinery is our first line of defence.

Unfortunately, it's not possible to put a measured exclusion zone in place that applies to every situation. The wording of this rule takes into account the practical reality that at times our people have to work in close proximity to fixed and moving plant / machinery.

For example, when they are:

- Laying pipes
- Using a tag line to control a suspended load

To put it simply, if we don't need to be near plant and machinery, the best thing we can do to be safe is to keep well away from it.

Job managers will need to consider this requirement when sequencing and planning all aspects of their work.

Subcontractors will need to be made aware of this requirement through their induction training, our risk assessment processes, and site tailgate meetings.

In addition to keeping ourselves clear of plant and machinery, we need to make sure that we all keep an eye out for members of the public or other visitors to site who may inadvertently wander into the plant exclusion zone.

Responsibility for complying with this rule applies not only to people on the ground in the vicinity of the plant, but also to the operator (and spotter) assigned to the task, unless of course the operator is unsighted.

Consider site communication options to reduce the need for people to approach plant, e.g. RTs.

- **We are always licensed, trained, and competent, or supervised**
- **We are always competent and licensed (where required) to operate plant**

Our health and safety legislation requires that all people who have been assigned a task have been assessed and are competent to complete it safely.

The operation of moving plant on a public road requires the operator to have a current NZ license.

Across the business we require staff to formally demonstrate their competence before they are permitted to operate moving plant. Records of these assessments and their grades are kept on file.

New or inexperienced operators are typically assigned an 'under supervision' grade and are permitted to operate plant in safe environments, under the direct supervision of a nominated supervisor as part of their training.

Subcontractors are required to have a system in place to assess the competence of their employees.

Owner operators, temporary workers, and casual labour hire employees can (if they don't have a system of their own) be assessed using the competency system and assigned:

- Competent to operate
- On nominated items of plant only
- On a specific site while working for us.

Note: This approach is important so that we avoid taking any unintended liability for the competence of third-party operators who may later be operating equipment that is unknown to us on sites, and in circumstances that we have no control over.

- **We always wear our seatbelts**

Seat belts must be worn at all times where fitted.

In some cases, other forms of restraint may be used.

8.1.1 WORKING FROM A MOVING VEHICLE

- **We always protect ourselves from falling from height or into water**
- **We always use fall protection when working at heights**

This may occur when setting out traffic management.

8.2 Traffic

This tends to be thought of as relating to Temporary Traffic Management, but it is also intended to cover all traffic movements on any all worksites including yards, quarries and greenfield sites away from public roads.

Pedestrians are included as part of traffic management, both the public and workers on site.

Refer to NZTA for NZGTTM updates

The Life Saving Action/Rule relevant to this critical risk is:

- **We always keep everyone safe when working in the road corridor**
- **We always have an effective plan to manage traffic, cyclists, and pedestrians**

This Life Saving Action/Rule applies to all of our work sites, yards, and facilities. The plan is expected to cater for:

- The separation and (or) protection of people from vehicles and plant
- Traffic movements and flow
- Construction vehicle movements, parking and refuelling
- The safe passage of pedestrians and cyclists
- Exclusion zones

If approval from a road controlling authority is required, then this must be obtained. In all other situations, the plan shall comply (as far as it's practical) with relevant legislation and local rules. New Zealands requirements are reflected in the New Zealand Guide to Temporary Traffic Management (NZGTTM)

The wording deliberately allows for emergency works situations where, for practical reasons, the plan may simply be an annotated sketch put together on site by experienced staff.

The wording emphasises the fact that the plan must be effective. If the 'plan to manage traffic' is not controlling the risk that traffic and vehicle movements present to our people, pedestrians and cyclists (i.e. slowing traffic down), then it must be modified until it does.

For work on public roads, we are required to comply with the New Zealand Guide to Temporary Traffic Management (NZGTTM). However, sometimes for our plan to be effective we will need to work to a higher standard than the guide.

8.2.1 INSTALLING TEMPORARY TRAFFIC MANAGEMENT

Where TTM is being installed from a vehicle, the speed must not go above 30km/hr. People working from the back of the vehicle should be suitable restrained, or otherwise protected from being thrown from the vehicle in the event of an accident.

Traffic management vehicles should be designed so that people are not directly exposed to traffic when they are accessing equipment from the vehicle (e.g. have access to equipment from the non-traffic side of the road). If people are accessing equipment from the rear of the vehicle, a shadow vehicle must be in place.

8.2.2 TEMPORARY TRAFFIC MANAGEMENT

All traffic controllers must be out of the line of fire. This can be achieved by the use of tools such as the eStop traffic lights, or Gibney paddle.

8.2.3 TRAFFIC CONTROLLERS OUT OF THE LINE OF FIRE

From July 2021 all Manual Traffic Controllers (MTCs) doing stop/go operations will be "out of the line of fire" as a basic expectation. This will reduce the likelihood of them getting struck by vehicles and may also reduce incidents of verbal or physical abuse from passing motorists. Subcontractors are expected to meet this requirement by January 2021.

The line of fire is defined as "within 1m of the edgeline or edge of seal". The intent of "removing MTCs from the line of fire" is eliminating the use of MTC if possible, or where MTC is unavoidable, placing the MTC as far as practicable from live traffic (still ensuring they can safely undertake their role and meeting all other obligations as relevant, but no closer than 1m).

HIERARCHY OF CONTROLS – IN RESPECT TO REMOVING MTC

The best opportunity to remove the need for manual stop/go operations is at the planning stage. Only when all efforts have been made to do this should manual traffic control be considered.

ALTERNATIVE TO STOP/GO OPERATIONS – EQUIPMENT

- eSTOP™ This portable traffic light system is controlled by a remote control, allowing the operator to be at a safe distance from the roadside eSTOP Operator Manual

MANUAL STOP/GO

Where circumstances prevent the use of alternate equipment and manual stop/go is necessary then a site-specific safe work method statement must be prepared, unless covered by the following scenarios:

- Where 3 or more roads requires Manual Traffic Control. The eSTOP is currently approved for use for up to 2-way management of traffic only. Where more is required, eSTOPs should be used on the road/s deemed to be the highest risk (usually where work is taking place). For the remaining intersecting roads, if they cannot be closed, then stop/go operations is allowable with an approved traffic management plan. When approval has been gained for the use of 3 or more eSTOPs, this will become the minimum standard.
- Short term stoppages at static sites. Stop / go operations, with an approved traffic management plan are acceptable for short term stoppages at static sites such as managing vehicle exit / entry.
- eSTOP failure

In case of on-site eSTOP failure, the use of stop/go operations is allowable. As part of the contingency within an approved traffic management plan, it should be documented that stop/go operations will be implemented in case of failure.

COMPETENCY

The requirements for traffic control using alternative equipment are the same as for manual traffic control; operators should be a qualified TMO or STMS. Supervision should be provided until the operator has demonstrated competency with the equipment in use, including communication.

8.3 Heights

For all work at height effective control measures must be implemented to prevent the fall of people or equipment from falling from a height, falling between levels, or falling into a hole, trench, or pit.

- **We always protect ourselves from falling from height or into water**
- **We always use fall protection when working at heights**

The previous wording of this Life Saving rule: 'You must use fall protection when there is a risk of falling', has proven to be impractical and impossible to comply with. Arguably, there is almost always some risk of falling.

Therefore, this Life Saving rule and these notes have been written in order to promote a safe, practical approach to working at heights.

This rule covers the following risks:

- People falling off something
- People falling into something
- Objects falling onto people below

Fall protection can take a number of forms including, but not limited to: barriers, edge protection systems, handrails, kick boards, the covering of excavations and fall hazards, lanyards, three points of contact at all times.

Reliance on administrative controls, like 'three points of contact' shall only be relied upon when it's the only practical option available and the risk of falling cannot be eliminated or managed any other way.

Examples where this may be the case include:

- Climbing into or out of truck, and machinery cabs
- Using a suitable ladder to change a light bulb

It's acknowledged that there may be some situations where the risk of falling cannot practically be controlled through the use of barriers, covers, or restraints. In these situations, it may be appropriate to apply for an exemption.

For a breach of this rule to be established there must be a practical alternative control available that was not used.

For example:

- Standing on the back of a truck deck to reach plant tie down points (no practical alternative = no breach)
- Standing on the back of a truck deck to cover, when this can be done from the ground (there is a practical alternative = breach).

We should always follow the hierarchy of controls: Fall prevention, then fall protection.

Eliminate	Prefabricate, lower items to the ground, pre-rig equipment to be lifted from trailers, install barriers prior to lifting elements
Substitute	Scaffolding in preference to elevated work platforms (EWP), EWP's in preference to ladders
Isolate	Use physical barriers – guard rails, parapets, shields, and fences to separate workers and protect edges where falls can occur
Engineer	Modify design/equipment to remove the need to access heights
Training & Administrative controls	Permits to work, work instructions, hazard ID and risk assessment, excavation checklists, fall prevention procedures. Training in the use of EWP's, harnesses, scaffolding and retrieval equipment
PPE	Fall arrest and lanyard systems A harness should not be used as the primary means of fall protection

Refer to the Working at Height guidance - WorkSafe

8.3.1 MECHANICAL ACCESS PLANT

Includes all mechanically operated plant used to gain access for the purpose of working at height.

For example:

- Mobile elevating work platforms (MEWPs)
- Forklift man cage
- Crane lift operations
- Knuckle boom platforms

These are specially designed pieces of equipment for particular types of operation. The correct type of machine must be selected for the intended work. The operator must be competent to operate the type of mechanical access plant and operate them within the manufacturer's guidelines.

8.3.2 SCAFFOLD

Scaffolds less than 5m to the working platform level must be erected by an experienced competent person in scaffolding. However, any scaffold greater than 5m must be erected by a qualified scaffolder.

All scaffolds must have a Scaffold Tag – a "Scaff Tag"- attached on completion and be inspected as required in compliance with AS/NZS 1576.

A Scaff Tag is internationally used and recognised as the safety system to assist with the control of scaffolding from first build to dismantle.

- All scaffolds will have a Scaff Tag attached on completion and be inspected as required in compliance with AS/NZS 1576
- Scaffolds over 5m in height must be erected by a qualified scaffolder
- Scaffolds less than 5m may be erected by a competent person

8.3.3 PREVENTING FALLING OBJECTS OR TOOLS

Controls must be implemented to ensure that objects / tools cannot fall when working at height. These controls may include, but not be limited to, kickboards, exclusion zones and lanyards on tools. Containment screening/sheeting may also be used in conjunction with the above.

The following are examples of possible controls:

- Kickboards to prevent falling objects
- Exclusion Zones
- Lanyards or drop ropes on tools
- Store materials/equipment securely to prevent movement

8.3.4 USE OF LADDERS

On fixed sites ladders, shall only be used for access and egress. Always maintaining 3 points of contact. They shall not to be used as a work platform unless they are specifically designed as a platform ladder.

However, there may be occasions where the use of a ladder to gain access to perform a task is necessary e.g. changing a light bulb or fixing a road sign on a post; in these cases always refer to the Water Ways guide.

- 3 points of contact must be maintained at all times
- Where practicable, work is to be performed on platform ladders
- Where practicable, consider the use of ladders that are engineered for the purpose they are intended for i.e. access

8.3.5 WORKING ON STEEP SLOPES / DROP OFFS

Where work entails working on steep slopes / drop offs that have a risk of a fall, these may require the use of a safety harness, rope system, or static line e.g. for the installation of gabion baskets, crash barrier railings, retaining walls, or when using weed eaters on a steep incline.

8.3.6 FALL ARREST OR RESTRAINT SYSTEMS

Fall Arrest systems should only be used if it is not reasonably practicable to either eliminate or isolate the risk of a fall.

These may include a personal safety harness, rope access system, industrial rope system, travel restraint system, or a catch platform.

All such equipment must be currently certified and inspected prior to use. All operators using such systems must have the appropriate training for the task.

Equipment that is damaged or fails inspection for any reason must be removed from service.

8.4 Lifting Suspended Loads

- **We always plan for and observe exclusion zones**
- **We always keep clear of suspended loads**

We must always keep well clear of suspended loads so that if the equipment suspending the load fails and the load drops suddenly, it cannot fall on us or our workmates.

Examples of suspended loads include:

- Plant or materials being moved by a crane or mobile plant configured as a crane (eg. excavator or telehandler)
- Un-propped truck decks
- Elevated work platforms

For the sake of clarity this Life Saving rule does not apply to workshop hoists which have been specifically engineered to allow for work beneath them.

A practical approach should be taken when applying this rule, by nature of the load or the work being undertaken there

will be times where certain workers need to work in close proximity to the suspended load, for example:

- A rigger will need to rig the load, for a short period a hand or limb could be under the suspended load/rigging
- A dogman will need to direct the placement of the load and make fine adjustments
- A concrete placer will need to manoeuvre a suspended concrete skip into position and open the hatch

Handling a suspended load should only occur when the use of tag lines is not practical. Once a suspended load is below chin height of the worker, hands maybe used to help guide the load into position and make fine adjustments.

Where work in close proximity to a suspended load is necessary, this must be limited to essential workers only.

In addition to keeping ourselves clear of suspended loads, we need to make sure that we all keep an eye out for members of the public or other visitors to our site, who may inadvertently wander into the 'fall zone' of a suspended load.

The fall zone will need to be identified, delineated where possible, and communicated to the crew during the daily risk assessment process.

Responsibility for complying with this rule applies not only to people on the ground in the vicinity of the suspended load, but also to the operator, and spotter assigned to the work.

8.4.1 OTHER PLANT

Includes:

- Excavators
- Loaders
- Tractors
- Any other plant, when carrying suspended loads

Forklifts or other equipment carrying a load on the forks or totally within a deck or bucket are not included because their load is not suspended. There is still a risk of overturning, operators need to know the lift limits and stay within them.

8.4.2 LIFTING EQUIPMENT

All rigging and/or lifting equipment used for lifting a suspended load must comply with Approved Code of Practice (ACOP) for load-lifting rigging. Lifting equipment (including chains and strops) must be inspected / tested annually by a qualified provider. Only yoke pinlock grab hooks are approved; not shortening clutches.

Each time lifting equipment is used it must be visually inspected for current certification, damage, and general condition. Any damaged or non-certified rigging/lifting equipment must be tagged out and not used until certified.

Lifting equipment is only to be used for lifting; it is not suitable for tying down or towing. Lifting equipment designated for use with cranes must not be used with other plant e.g. excavators or loaders.

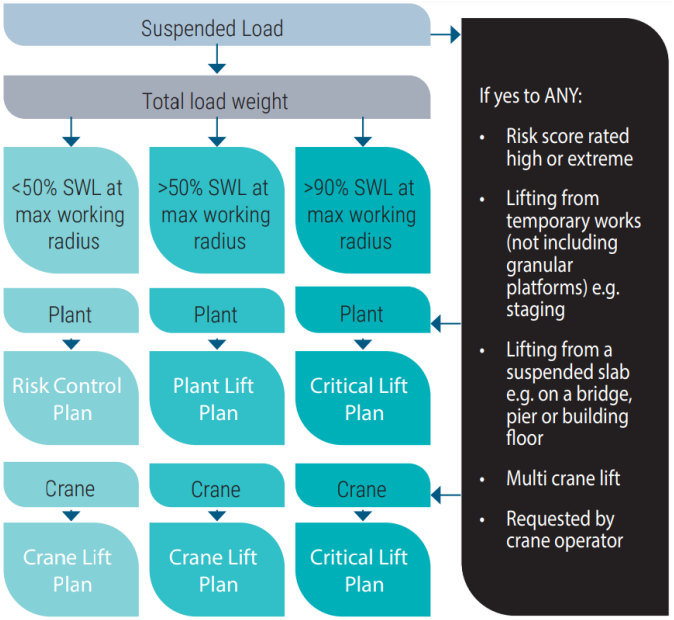
8.4.3 MANAGING THE RISK FROM SUSPENDED LOADS

The primary means of controlling the risks from suspended loads is by using a risk control plan in conjunction with a lift plan. Lift plans are a tool used to ensure a lift is not outside the normal operating conditions of the particular lifting appliance being used.

The following points must be verified as part of the basic requirements of a lift plan:

- The actual load weight to be lifted and the actual maximum radius required
- The lifting appliance's capacity to place the load at the above radius
- The rigging capacity of the equipment being used
- The operator's training and qualifications
- That ground stability is capable of supporting the combined weight of the lifting appliance and the load.
- That the lifting appliance is safe and complies with legal requirements
- Any surrounding overhead services
- Wind speed

8.4.4 WHICH LIFT PLAN DO I NEED?



8.4.5 GENERAL REQUIREMENTS

- Only people participating in the lift should be in the work area. A barrier must be set up and maintained to keep all other workers and public clear of the work area
- All plant being used for lifting suspended loads must have information available allowing the operator to understand the safe workload at various reach distances
- All workers involved in the lift must be trained and competent for the task being completed
- There must be an established means of communication between the plant operator and the signaller/dogman (where a signaller/dogman is part of the task)

8.4.6 CRANES

Crane operations are, by their very nature, complex and potentially high-risk activities that leave little room for error. Operational activities involving cranes require a high level of competency and planning to successfully complete a safe and controlled manner.

8.5 Energy

8.5.1 TYPES OF ENERGY

Energy	Examples
Mechanical	Things that can move (kinetic); trucks, forklifts, loaders, graders, plant, forklift
Electrical	Things that have fuses / wiring; batteries, switchboards, electrical cabinets, batch plants, conveyors, mobile equipment
Stored Energy	Things that can release stored energy; accumulators, springs, batteries, compressed air, flywheels, hydraulic systems
Hydraulic	Things containing oil or water under pressure; mobile plant, excavators, brake lines, hydraulic power packs, high pressure hoses
Pneumatic	Things containing air under pressure; air compressors, air receivers, rattle guns, hopper gates, air slides
Gravity	Things in the air / things that can fall; raised loader buckets, crane booms, excavators, truck decks, roller shutter doors
Chemical	Things that can react and release energy; fuels, LPG, degreasers, oxidisers, explosives, acids, reagents
Radio Frequency	Things that use or emit electromagnetic radiation; mobile phones, RT equipment, arc welders, remote controls
Thermal	Things that are hot or cold; radiators, exhausts, steam lines / chambers, air conditioning units
Radiation	Things that emit radiation; NDMs, sun exposure, radon

8.5.2 LOCK OUT TAG OUT (LOTO)

"Lock Out Tag Out" (LOTO) is the process of isolating (by removing or directly physically interrupting) energy sources so they cannot be released and cause harm. Once the energy is isolated a personalised padlock and tag is applied to prevent re-energisation. Any lock out device used must be capable of preventing the release of the maximum potential energy from the source.

This applies whenever plant or equipment is being serviced, maintained, repaired or when any guard needs to be removed for cleaning.

When plant and equipment is being serviced, maintained, or repaired, the lock out tag out procedure must be followed at all times.

- **We always isolate, lock-out, and test equipment and metal pipe before working on it**
- **We always isolate, lock out and test before working on plant and equipment**

Once the energy source has been isolated and locked out, it is essential that the effectiveness of the 'lock out' is tested before work begins. This is the only way we can be certain that our people won't be exposed to uncontrolled energy sources and hurt.

This does not apply to:

- work on powered equipment where the energy can be removed by unplugging the equipment and cannot be turned back on without the knowledge of the staff member undertaking the task.
- the normal use of equipment e.g. changing the tool attached to an air hose

Exceptions:

Minor tool adjustments

- Where there is no risk to workers, the public or the environment

Fault testing on electrical equipment

- Where the equipment must be energised for location of the fault-testing must be undertaken by a qualified electrician under controlled conditions

Machine/Motor balancing & monitoring works

- Where rotating equipment needs to be energised to allow balancing, bearing monitoring, performance testing with guards removed- this task must be undertaken by a competent person under controlled conditions

LOCK OUT - PROTECTS PEOPLE

Lock Out is the process used to protect people which is indicated by the use of danger tags.

The Lock Out process plus danger tags indicates that plant or equipment is being worked on.

Every worker doing the work should attach their own tag and padlock which must be clearly filled out with the worker's details to track them in an emergency, or to follow up on tags that haven't been removed.

TAG OUT: OUT OF SERVICE – PROTECTS PLANT

Tag Out is the process of identifying equipment that is not working properly and is awaiting repair. Out-of-service tags protect equipment from harm; they indicate that something is not working properly and is awaiting repair. These are generally attached with a cable tie or carabiner and do not require a padlock to be attached. Your foreman/supervisor/ manager must be informed when a caution tag has been attached to a piece of equipment so that repair can be arranged.

When applying isolation locks and tags where there is more than one isolation point an isolation permit must be completed. The permit receiver (person wanting to complete the work) will request the permit from a WWL approved permit issuer. The permit issuer must be a competent person in the operation of the equipment that requires isolating. Isolation locks can be applied by the permit issuer or receiver. Isolation permit is not required when tagging equipment out of service.

The use of the Lock Out, Tag Out process indicates that repair and maintenance are being performed.

Permits need to be considered for hot work, cold work, work in a hazardous atmosphere, demolition, and potentially confined space entry.

TRAINING AND COMPETENCE

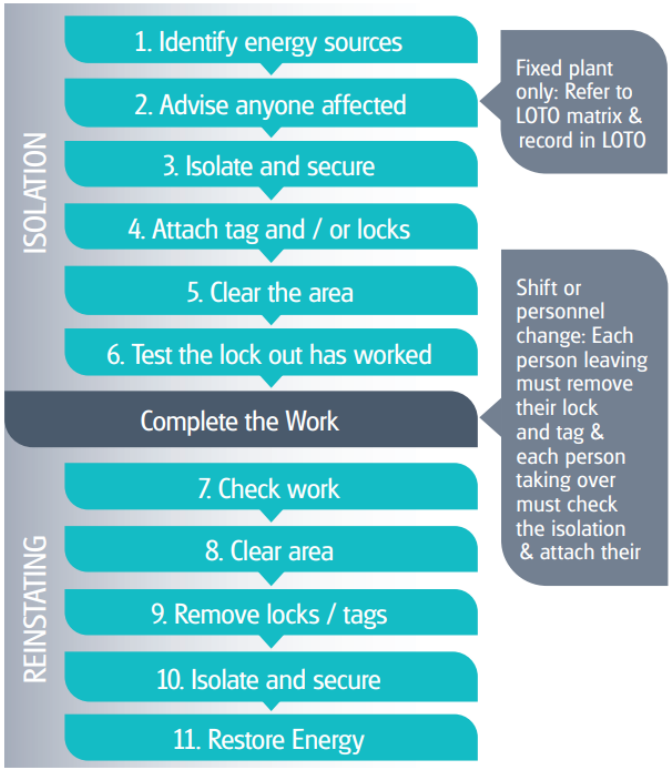
Isolators must be trained in the lock out processes and deemed competent.

Permit issuer must be competent in the use of the Wellington Water Isolation Permit to Work.

Mobile plant should only be locked out by people undertaking mechanical repairs. Unsafe equipment can be identified by all other workers using the out-of-service tag.

LOCK OUT PROCESS (OVERVIEW)

This process is a general overview of the Lock Out Tag Out process – refer to the LOTO process for the specific process used in different situations.



WORKING LIVE

Working on live electrical equipment is not permitted unless fault finding or extra low voltage circuits (below 50volts).

Fault finding must be completed by a trained and competent electrician (not required for 50volts or less).

Live water tapping must be completed by a competent person and in consultation with the Treatment Plant Operator. There must be a Risk Control Plan for this work.

PPE requirements are:

	Office DBs	Small Less than 125A	Medium Above 125A
Operation	Nil	Basic	Basic
Maintenance	Basic	Category 0	Category 1

All lines and cables must be treated as live at all times, including those underground. Never cut or alter cables unless qualified to do so; always check and confirm whether or not they are live.

THREE PHASE PLUGS

Incorrect use or use of damaged three phase plugs and sockets present a number of hazards including heat, sparks, arcing, burning and live sockets. Employees using three phase plugs and sockets need to understand the correct process for engagement and disengagement. The plugs and sockets should also be inspected by registered electricians to identify and repair or decommission any faults or damage.

8.6 Digging / Excavation

Risks from digging and excavating include:

- Service strikes
- Falling in
- Trench collapse
- Fumes from plant and equipment (consider potential for confined space)

By following the Excavation Safety Process you will address most of these risks.

8.6.1 WORKING WITH METALLIC PIPES

Metallic Pipes can carry current from faulty electrical installations, the following lists provides guidance on what is considered, but not limited, to be a metallic pipe:

- Copper
- Galvanised

Risks from working with metallic pipes include:

- Electric shocks
- Various cardiac complications
- Cuts and abrasions

CRITICAL RISK

Working with electricity is a critical risk that is why we need to ensure that the controls are used whenever you are working on metallic pipes and remember that critical risks are the risks that can kill us.

Potential causes of metallic pipework carrying electrical current includes:

- Houses with metallic pipework which has been used as an earth
- Faults from the power network using metallic pipework as an earth

MINIMUM REQUIREMENTS FOR WORKING WITH METALLIC PIPES

Metallic pipes must always be bridged. If bridging cannot be achieved for any reason, including a metallic to plastic or concrete connection, then electric safety gloves must be worn to complete repairs.

REQUIREMENTS FOR THE TOOLS

- Bridging cables with an electrical current rating of not less than 70 Amps
- Electrical rated 00 gloves must be worn to attach and remove bridging cables
- When worn throughout repair when bridging cannot be achieved

GLOVE CHECKS

Below are some checks you can complete to ensure water tightness of your gloves prior to use.

- Visually check your gloves for damage that penetrates through the glove
- Blow your gloves up and place them in water, if air bubbles rise to the surface, then the gloves have damage and will not be watertight

If your gloves are not watertight do not proceed with work, use another watertight pair of gloves, or stop work and contact your team leader.

CONNECTIONS

When applying bridging and plates to metallic pipes you must ensure you are connecting to a clean surface to allow the electrical current to pass through the bridging plates and/or cables. This may require cleaning of the pipes surface through scraping back dirt, paint, rust or any other build up that may prevent a good connection.

If the pipe cannot be visually checked for a clean connection, then the excavation must be over pumped to allow for a visual confirmation of a clean connection.

WHAT TO DO IF YOU RECEIVE AN ELECTRIC SHOCK?

- Stop work and make the area safe
- Contact your team leader and/or manager to report the incident ASAP
- Attend a medical centre for a check-up, this will be organised by your team leader or manager

WHAT TO DO IF YOU FIND A FAULT?

Use of CAT on power on the power can give indication as to the state of the pipe but should not be used to eliminate the use of controls such and bridging and glove use. The reason behind this is that electrical appliances such as refrigerators, washing machines cycle on and off meaning that a fault may not be detected until the appliance starts again.

If a fault is known or suspected then contact needs to be made with the team leader ASAP, the team leader must then report the fault through to Wellington Electricity.

WHAT TO DO IF YOU ARE UNSURE OR SOMETHING CHANGES?

Ask the Stay Safe questions:

- What am I doing?
- What could go wrong?
- How can I do it safely?

If you are still unsure the contact your team leader before continuing works.

BRIDGING GUIDANCE

As there is a number of ways pipework can become live and also wide range of sizes with metallic pipes, each situation may be different and require a risk assessment to determine the tools and methods to be used.

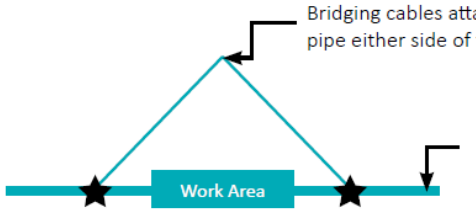
For guidance use the following flow chart, Figures and if you are unsure or something is different stop and ask for help.

TRAINING

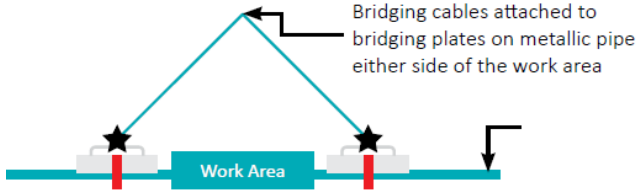
All personnel working with metallic pipes where there is a risk of electric shock must be trained using this process and the metallic pipework Water Ways guide, with proof of this training to be recorded in their induction checklist.

Worksafe: Excavation guidance

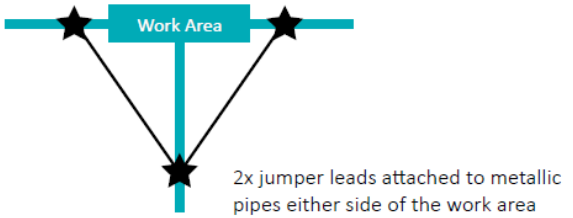
Bridging – Lateral's <50mm

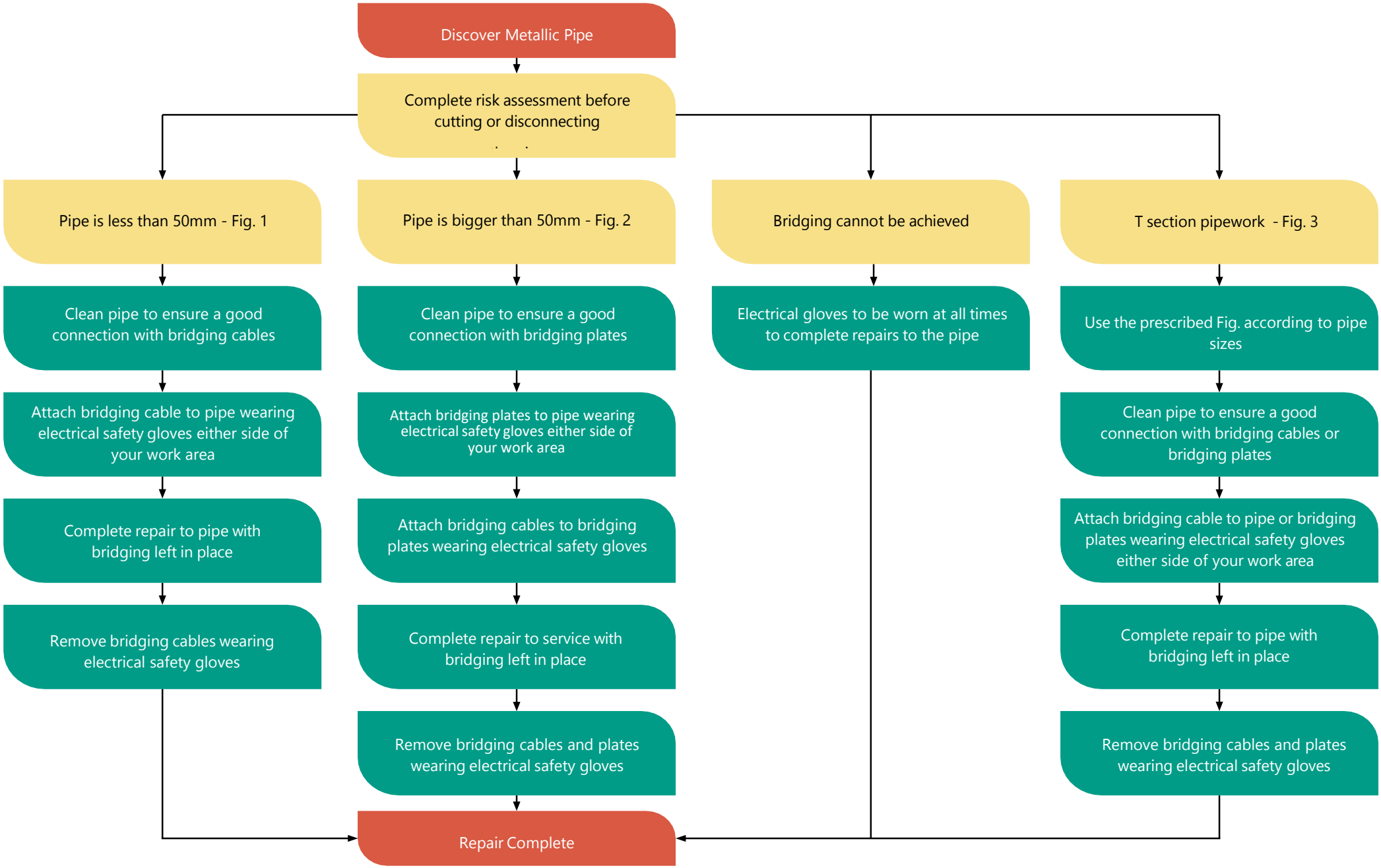


Bridging – Mains >50mm



Bridging T Sections




Discover Metallic Pipe
Complete risk assessment before cutting or disconnecting
Pipe is less than 50mm - Fig. 1
Clean pipe to ensure a good connection with bridging cables
Attach bridging cable to pipe wearing electrical safety gloves either side of your work area
Complete repair to pipe with bridging left in place
Remove bridging cables wearing electrical safety gloves
Pipe is bigger than 50mm - Fig. 2
Clean pipe to ensure a good connection with bridging plates
Attach bridging plates to pipe wearing electrical safety gloves either side of your work area
Attach bridging cables to bridging plates wearing electrical safety gloves
Complete repair to service with bridging left in place
Remove bridging cables and plates wearing electrical safety gloves
Bridging cannot be achieved
Electrical gloves to be worn at all times to complete repairs to the pipe
T section pipework - Fig. 3
Use the prescribed Fig. according to pipe sizes
Clean pipe to ensure a good connection with bridging cables or bridging plates
Attach bridging cable to pipe or bridging plates wearing electrical safety gloves either side of your work area
Complete repair to pipe with bridging left in place
Remove bridging cables and plates wearing electrical safety gloves
Repair Complete

8.7 Working Around Services

Our primary tools for avoiding underground services are:

- Site checks
- Service plans
- Cable location tools – Cat & Genny
- Digging and Excavation permit
- Site markouts

8.7.1 SITE CHECKS

Visual inspection of the site should be carried out to identify clues to the existence of underground services, such as electrical boxes or manhole covers.

8.7.2 SERVICE PLANS

These need to be requested for all planned work. If there are none available, then this needs to be positively confirmed by the asset owner.

Where service plans are unavailable, or the work is under emergency conditions, then site checks and cable location become more important.

8.7.3 CABLE LOCATION

Scope and limitations:

- Cable locator/avoidance tools work best on active, electrical, telephone or data cables
- By using all detection modes they can, but not consistently, locate dead or quiet cables (i.e. street lights that are off)
- Trace wires, quiet cables and some pipes, can have electromagnetic signals induced into them via a Genny to aid service detection
- Correctly inducing a signal into a live or quiet cable can also enable depth indication of these services
- They will not locate non-conductive materials unless active trace wires have been inserted or installed for this purpose

8.7.4 APPROVED SUPPLIERS BASE MODELS

BASE MODELS

Cable location equipment must be purchased through either

Georg Fischer Ltd or Global Survey Ltd; they are kept aware of our current minimum requirements and will ensure the correct model is supplied. The negotiated price for base models includes:

- Hand detector / wand
- Genny / signal generator
- Accessory signal clamp
- Training

Brand	SPX (Radio Detection)	Leica
Model	eCAT4+ with Genny4	DD220 Smart with DA220 signal transmitter
Supplier	Georg Fischer Ltd	Global Survey Ltd
Website	www.rdlocators.co.nz	www.globalsurvey.co.nz

PRECISION LOCATORS

Where specialised equipment is required, this can be purchased through the above suppliers. They are recommended for specialist staff who are regularly engaged in service locating and require greater resolution of target service, direction and depth.

8.7.5 TRAINING

All workers who use a cable locator must complete the Locating and Protecting Underground Services (LPUS) training course by approved trainers with a follow-up in field competency assessment. This may be supplemented with a training course run by the supplier or by a person authorised by the supplier.

Workers should not operate the cable locator until the calibration settings; instructions, labels, cautions, warnings, and any other literature accompanying it is understood.

When competent, workers should understand:

- Passive location, suitable for live/active cables, uses only the handheld (wand) tool, and represents an introduction to the use and capabilities of cable location/avoidance devices
- Active use of a cable locator requires the application of an artificial electromagnetic signal, from a generator (genny), into inactive/metallic services. This technique, if implemented correctly also allows an indicated depth to the centre of the service to be determined

Precision Locators for specialist operators offer additional features and require additional training specific to the device. This training is usually provided by the precision locator providers or agent.

8.7.6 EQUIPMENT MANAGEMENT CALIBRATION AND MAINTENANCE

Cable locators should be scheduled (via the PAM system & asset number) for:

- Annual calibration
- Maintenance as per manufacturers recommendations

Stagger cable locator calibrations so that there are always locators available. Our preferred suppliers have units available for hire or loan if organised in good time.

REPLACEMENT

Locators should be considered for replacement every five years. Some models are now obsolete:

- CAT 1 or 2: These models are over 10 years old, and it is strongly recommended that these be replaced. Spare parts and servicing is no longer available
- CAT 3: CAT 3 locators are still serviceable and considered usable

- CAT 4 models: This model is approximately 7 years into the model life cycle (2019). CAT4+ and eCAT4 units are serviceable and remain current
- Fuji, Metrotech, Rycom, older Leica and other locators: These units are not supported by trainers or supplier agreements. These should be replaced

8.8 Manual Handling

Manual Handling is the use of physical force by someone to move something. This includes any activity requiring a person to lift, lower, push, pull, carry, throw, move, restrain, hold or otherwise handle any animate or inanimate object.

8.8.1 RISK ASSESSMENT

Risk assessment of manual handling tasks should include consideration of the weight and shape of the product, the position required for the lift, the number of lifts required and the physical capacity of the worker.

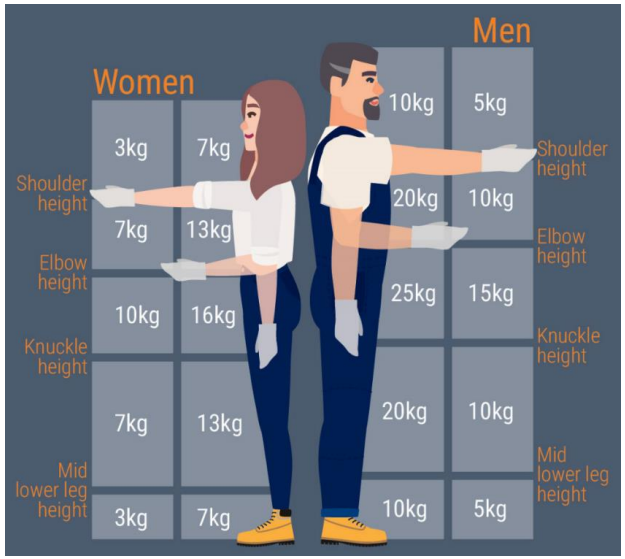
Lower risk	Higher risk
Carrying items close to body	Having to reach out or twist
Occasional lifts	Repetitive lifts
Low force required	High level of force required
Regular breaks from task	Few breaks from task
Easy to hold loads	Bulky or unwieldly loads
Stable loads	Unstable loads

There is no set "safe" weight for someone to carry. As shown in the diagram in the next column, for men, carrying a 25kg weight close to the body at waist height is the equivalent of lifting a 10kg weight from ground level.

8.8.2 CONTROLS

ELIMINATE

Where large quantities of a product are required, manual handling can be eliminated by ordering on pallets or in product sizes that cannot be lifted by a person. This obviously requires the use of mechanical means to move the product



SUBSTITUTE

As technology improves, structural materials are becoming lighter and sufficiently strong for the task.

Examples include:

- lightweight aggregate blocks
- carbon fibre instead of steel

Where necessary reduce the package size, for example to 20kg bags of concrete rather than 40kg. As this may require more trips and often must be combined with engineering controls.

ENGINEERING

There are many manual handling aids for a variety of tasks. Powered options are generally best, as non-powered options will require pushing, pulling, or lifting. For site work, engineering solutions need to be robust and able to cope with site conditions to avoid adding to the level of manual handling required.

Examples include:

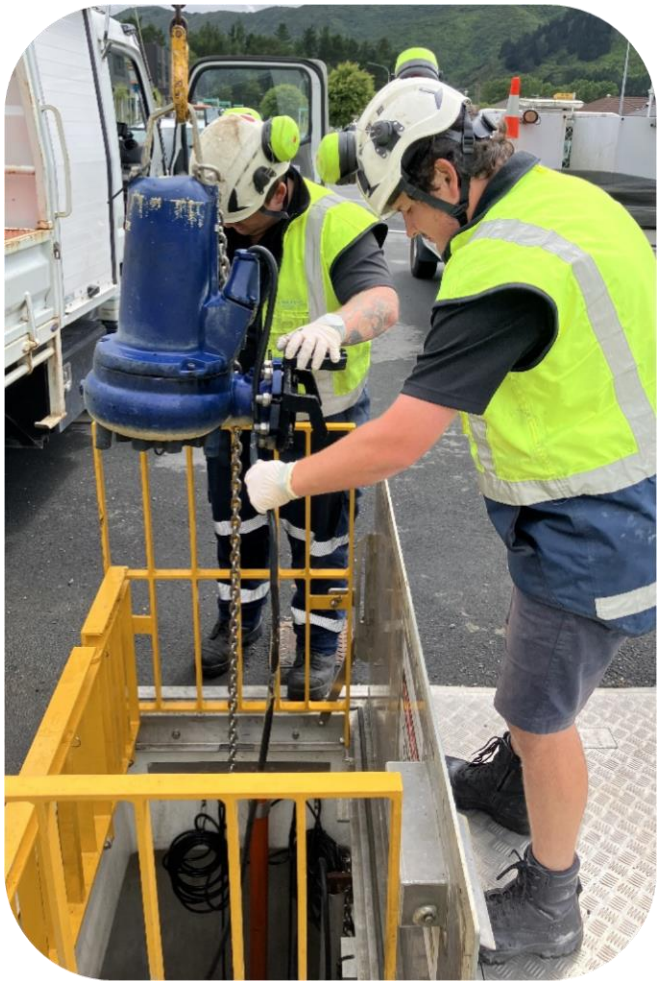
- Hand Trolley
- Lifting Hooks
- Platform Trolley

PPE

Some manual handling tasks require gloves to be worn; this will be identified on the site risk control plan.

Back supports or weight belts should not be required for manual handling tasks unless a person has been specifically told to wear one by their treatment provider.

A request for this type of assistance is a flag to show that the task needs re-assessing and further controls, or alternate methodology put in place.



8.9 Confined Spaces

Anyone entering a confined space or acting as stand-by must have current confined space training. All confined space entry requires a permit – refer to the Confined Space Permit section

The permit covers requirements for general ventilation, communication, and rescue planning. Consideration must always be given to whether more specific planning is required, particularly if hot work is also being carried out.

On fixed sites, confined spaces should be identified either with signage or a register.

8.9.1 LOCK OUT TAG OUT

Positive steps shall be taken by the permit issuer and receiver to ensure:

- Prevention of accidental introduction of any materials such as water, sewerage, contaminates and rocks
- De-energisation and lock-out, or de-energisation and tag out and, where possible, both of machinery and equipment with moving parts
- Isolation of all energy sources that may be external to, but still capable of affecting, the confined space (e.g. heating or refrigeration mediums)
- Systems that require expert isolation such as fuel tanks. Nitrogen tanks should only be isolated after consulting with experts in that field (e.g. electricians, engineers). This should not be attempted by inexperienced operators

Re-activation of any isolated equipment shall only occur following confirmation by the permit receiver that all persons and tools have been removed from the confined space. This shall be by a conducting a physical count of personnel and equipment and ensuring all personnel have signed off the entry permit.

8.9.2 ATMOSPHERIC SAFETY

No person shall enter a confined space until it is free from any explosion hazard and the atmosphere has been deemed safe by undertaking atmospheric testing. The evaluation of the atmosphere and a survey of other hazards shall be performed from outside the confined space, before any entry occurs. All confined space entries must include continual atmospheric monitoring using a calibrated gas detector suitable for the identified risks.

- Where necessary the confined space shall be cleared of contaminants by using a suitable purging agent
- Care should be taken to ensure purging agents do not create additional hazards either inside the space, or outside where they vent
- The acceptable working oxygen level range is 19.5% and not greater than 23.5%
- Extremes of temperature must be considered as a risk
- Any flammable or combustible contaminant must be less than 5% of its LEL at point of entry into the confined space. If the level is between 5-10% entry may be considered only with continual atmospheric monitoring and having additional controls in place and approved by the permit issuer
- Where continuous ventilation is required, the system must be monitored and have controls identified and tagged to prevent interference

8.9.3 GAS DETECTORS

Care is required in choosing an appropriate gas detector for the risks of the work. Diffusion gas detectors are suitable for work in wet conditions, while pumped detectors are better for high-risk tasks. PID:VOC detectors should be used when there is a risk from volatile organic compounds (VOCs) such as waste oil collection or working around bitumen / kerosene.

Standard gas detectors have sensors for oxygen (O2), hydrogen sulphide (H2S), carbon monoxide (CO) and flammables – either lower explosive level (LEL) or volatile organic compounds (VOC). If other gases are likely to be a hazard e.g. chlorine in water treatment plans, then a gas detector with a sensor for chlorine will be required.

Gas detectors must be bump tested before each use and again, if the detector is dropped or damaged.

8.9.4 OTHER EQUIPMENT

All equipment must be visually checked, in good condition, suitable for the task, certified and calibrated where required.

Common confined space equipment includes:

- Hoists
- Winches
- Tripod
- Harnesses
- Lanyards
- Lifelines
- Rope rescue system
- Ladders
- Barricades and Signage
- Intrinsically safe torch
- Radio (RT)
- Ventilation system
- First aid kit
- Fire equipment.

Do not use petrol powered equipment

8.9.5 EMERGENCY RESPONSE

The type of evacuation or rescue will depend on the situation that has developed.

Evacuation or rescue may be required in the following scenarios:

- Self-evacuation in the case of a slight injury or suspected hazard
- Assisted evacuation in the case of an injured or collapsed person
- Emergency rescue

The relevant rescue/evacuation procedures must be understood and rehearsed prior to any Confined Space work. As part of the confined space entry permit, a rescue plan should be developed for the likely scenarios (depending on the work being completed).

Note: The sounding of an atmosphere monitoring alarm requires immediate evacuation.

SELF-EVACUATION

- Immediately alert all confined space team members and/or the stand-by person(s) of the hazard/reason for evacuation, the nature of any injury and the route of evacuation
- Evacuate via the quickest, safest exit and means
- Apply necessary first aid where required as soon as it is safe to do so
- The responsible manager will account for all personnel as soon as the confined space is evacuated and report the incident via CAMs or MyVoice

ASSISTED EVACUATION: INJURED OR COLLAPSED PERSON

Immediate and astute decisions are required to ensure an injury or collapse was not the result of unidentified contamination or unidentified gases. If the reason for a collapse is unknown, a hazardous environment must be assumed.

Immediately alert others in the confined space and the stand-by persons of the hazard and reason for evacuation. The stand-by person will immediately contact emergency services if warranted.

The confined space team must exit via the quickest, safe route. Although it feels morally wrong, the stand-by person MUST prevent anyone from immediately entering the confined space. In an emergency, the spontaneous reaction to immediately enter and attempt a rescue may lead to multiple fatalities- of those needing to be rescued and those attempting the rescue.

Upon exiting all persons are to be accounted for by the stand-by person. The responsible manager will report the incident via CAMs or MyVoice.

EMERGENCY RESCUE: HAZARDOUS ENVIRONMENT

Immediately alert the work team and the stand-by person of the emergency and the need for rescue. Where the stand- by person is unaware of the condition of the work team OR the cause of injury OR there is a loss of communication, a hazardous environment must be assumed, and hazardous environment rescue procedures adopted.

- The stand-by person or permit holder will immediately contact emergency services
- Always carry out emergency rescues via the quickest and safest route
- If possible, and safe to do so, identify and isolate the hazard

Although it feels morally wrong, the stand-by person MUST prevent anyone from immediately entering the confined space. In an emergency, the spontaneous reaction to immediately enter and attempt a rescue may lead to multiple fatalities- of those needing to be rescued and those attempting the rescue.

Only enter the Confined Space by:

- The use of SCBA
- Isolation and control of the hazard AND revaluation of the atmosphere with an appropriate gas detector
- Skilled/specialist rescue personnel are available to take control of the rescue

This emergency response applies even in an emergency situation to provide urgent resuscitation, first-aid. In an initial response when emergency rescue is required, standard rescue techniques shall be applied by trained personnel.

Upon exiting all persons are to be accounted for by the stand-by person. The responsible manager will report the incident via CAMs or MyVoice.

8.10 Hot Work

Hot work is work that could create a fire due to an ignition source, such as sparks or heat. This might include welding, grinding, gas cutting, or tasks where static energy could be generated.

Hot Works Permits are required, and particular care must be taken when working on any container or pipe that has contained a combustible substance or may contain a flammable atmosphere.

Refer WorkSafe: Hot work on tanks and drums

8.11 Isolated Work / Working alone

Where possible, plan work to eliminate the need for lone or isolated work. Where this work is unavoidable, workers must have a means of communication with their manager in case of emergency appropriate to the environment and task e.g. EPIRB or Spot device. Consider:

- Network coverage
- Time for rescue
- Likely emergency situations
- Who is available to help

Work is underway to deliver a standardised national solution using satellite-based devices supported by a centralised call centre.

8.12 Hazardous Substances

IDENTIFY THE RISK

Prior to purchase:

- Review the health, safety, and environmental risks and consider whether less hazardous options are available
- Consider other substances in use and any storage or compatibility requirements prior to purchase
- This process can be made easier by using the WorkSafe Hazardous Substances Calculator to identify compliance requirements

At point of purchase:

- Ensure a NZ compliant safety data sheet (SDS) is provided by the supplier
- Identify a safe delivery area and advise the supplier of delivery requirements secondary containment
- For detailed advice, particularly for Class 6 and Class 8 substances, refer to the Approved Code of Practise for Secondary containment systems.

The purpose of secondary containment is to contain a spill, or release of substance that can pool, in the event of an emergency, and commonly includes bunding and double-skinned tanks.

General requirements:

- Storage areas should be secure and fit for purpose e.g. fire resistant, clear from hot work areas etc
- Storage containers must be clearly and correctly labelled
- Secondary containment is required if the volume threshold for a substance has been met. For example, Petrol (Class 3.1A) requires secondary containment when storing 100 litres or more
- The secondary containment should be able to hold the volume of the largest container + 10% (to allow for residue or rainfall etc within the bund)
- Secondary containment must be constructed out of material that is fit for use so shouldn't absorb or react with the substance being stored

ASSESS THE RISK

- Identify the site storage areas and the hazardous substances they contain
- Develop and maintain an inventory for each area using WorkSafe Hazardous Substances Calculator (Using the HSR number of sections 15 of the SDS speeds up this process)
- Ensure SDS are available within 10 minutes for all workers, using the hazardous substances (electronic or hard copy).
- Review the SDS and the use of the chemical together to identify risks and appropriate controls. As an example, a chemical that may be an irritant if inhaled should not be used in a spray, and / or appropriate respiratory protection should be provided

IMPLEMENT CONTROLS

- Follow the control requirements from the calculator (recommend CAMs entry for action management) for example, Location compliance certificate, separation distances, training and signage
- Develop emergency plans as required
- Dispose of hazardous substances once expired (refer below)
- Remove hazardous substance products when no longer required
- Only purchase the quantity of product required to complete the task
- Chemicals should be stored in their original, correctly labelled containers. If the chemical has to be decanted into a secondary container, then that container must also have adequate labelling attached to it so that it is obvious to anyone what the contents are

MONITOR EFFECTIVENESS

- Record the inventory PIN (generated from the hazardous substance calculator) for future reference with an annual review monitoring step
- Location compliance certificates and stationary container compliance certificates MUST be recorded in CS-Vue with their expiry date
- Review annually, or post-incident. Reviews should ensure:
  - The inventory is up-to-date
  - Control measures e.g. signage, location compliance certificates are current and separation distances maintained
  - Appropriately trained workers (training requirements will vary dependent on chemicals being used and quantities stored). The calculator will prompt when certified handler training is required
  - Where exposure to a chemical triggers the requirement for annual health checks the medical records must be kept for 30 years, other than asbestos records which must be kept for 40 years

8.12.1 DISPOSAL

- Refer to the SDS for disposal requirements for product and containers
- Plan disposal prior to labels becoming illegible in order to reduce costs and compliance requirements
- Unlabelled containers need to be disposed of via an approved disposal agent e.g. TransPacific, ChemWaste, Solvent Rescue
- Update site inventory and emergency plans

Direct Importing or Manufacture of Hazardous Substances
Contact the Health and Safety Team for advice prior to starting.

8.12.2 MANAGE COMPLIANCE REQUIREMENTS

- Refer to EPA's requirements for importers and manufacturers
- Imported or locally manufactured hazardous substances must be approved under Hazardous Substances Regulations before they are imported or manufactured

- Products that cannot be assigned to a group standard, or fit an existing approval, will need to be referred to the EPA for approval.
- Develop correct packaging and labelling

Once the product is approved, follow risk management for use and disposal as described in Disposal dection above

On-selling or Transfer of Products (Purchased or Manufactured)

- No hazardous substances are to be received or sold/ transferred without an SDS
- Ensure transfer of products is undertaken in accordance with Section 14 of the SDS (transport information)

8.13 Guarding

Guarding should meet the requirements of AS1755-2000 (Conveyors – safety requirements), AS1657 – 2013 (Fixed platforms, walkways, stairways and ladders – design, construction and installation) and the AS/NZS 4024:2014 series (Safety of machinery).

8.14 Rail

There are a number of requirements that need to be met before work is undertaken in the rail corridor. Our definition for the rail corridor is fence to fence or where there are no fences, 10m from the nearest track and 10m from the nearest rail structure: e.g. Overhead wire pole, horizontally and vertically.

TO WORK IN THE RAIL CORRIDOR

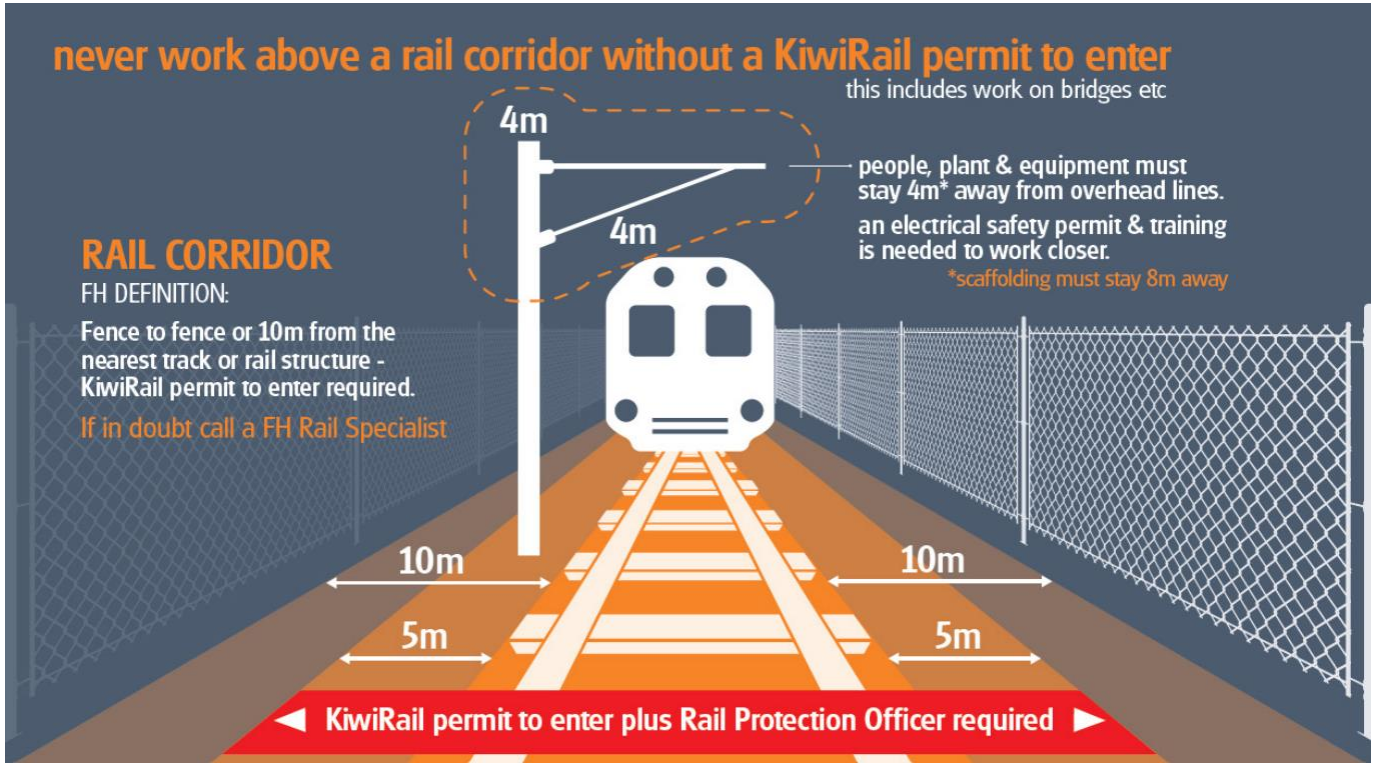
- Contact a FH rail specialist to confirm specific requirements e.g. inductions, training, additional permits – allow 30 days lead in time
- PPE standard is orange hi-visibility clothing (no green, yellow or red allowed)
- A KiwiRail permit to enter must be obtained when working within 5m of any rail structure
- A Rail Protection Officer (RPO) must be present when working within 5m of any rail structure

RAIL PROTECTION OFFICERS (RPO)

All workers on site must follow the RPO's instructions.

Rail protection officer responsibilities include:

- Provide rail protection for the work area appropriate to the work being done
- Control access to the work area (including managing the lock on frame where required)
- Identify a safe place that on one side of the rail corridor where people and equipment cannot be struck by a passing rail movement
- Coordinate the movement of rail vehicles within and through the protected work area
- Communicate with Train Control (the centre from where the movement of all rail vehicles and track access in a specified area are controlled)

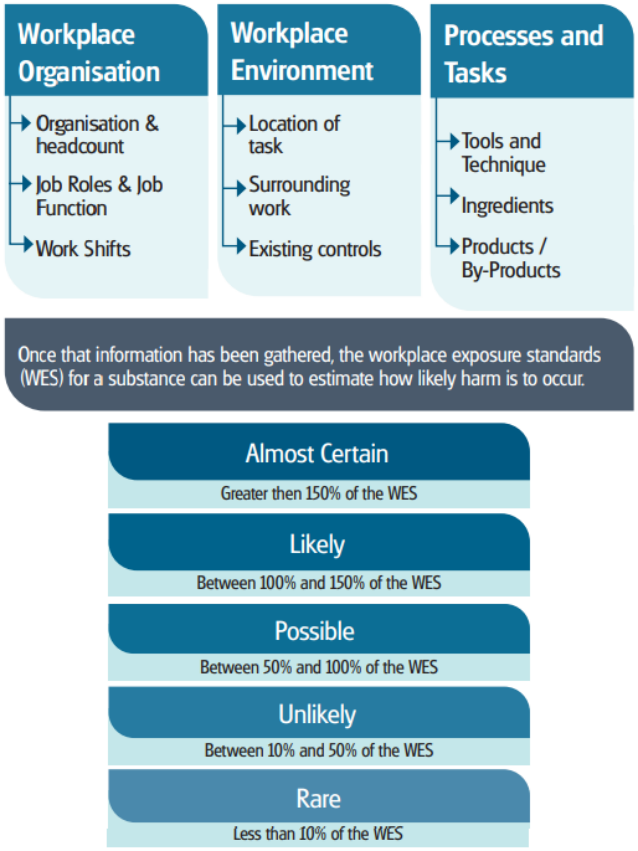


9. Significant Health Risks

Health risks are often grouped into:

- Physical
- Chemical
- Biological
- Psychosocial

Health effects may be acute or chronic, often the Safety Data Sheet (SDS) will be the first resource to identify the potential risks and the consequence of exposure. Health risk assessment needs to include the workplace organisation, environment, tasks, and processes.



9.1 Dust

9.1.1 GENERAL DUST

Exposure to any dust in excessive amounts can create respiratory problems, skin / eye irritation, or lung cancer. Dust is not always an obvious hazard as the small particles that cause the most damage may be invisible to the naked eye; health effects can also take many years to show up.

The size of the dust particles affects how far they may enter the respiratory system. The largest particles fall out of the air very quickly and are low risk. The smallest particles can reach the small areas of the lungs and are the highest risk.

WorkSafe: Dust information page

Workplace exposure standards (WES) are set for specific dusts, but airborne concentrations of any dusts should be kept below 3mg/m3 for respirable particulates and 10mg/m3 for inhalable particulates.

9.1.2 SILICA DUST

Silica is a natural substance found in concrete, bricks, rocks, stone sand and clay. It can also be found in some grout products. Dust is created when materials containing silica are cut, ground, drilled or crushed and also during activities like shovelling and road sweeping. The dust that is small enough to be breathed in is **Respirable Crystalline Silica** (RCS).

All workers regularly exposed to RCS should receive spirometry (lung function test) testing as part of their annual health check. Where we expose the workers of other companies (contractors, labour hire) to RCS they should be advised of the risk and that health checks are required.

HEALTH EFFECTS

The following lung diseases can develop from breathing in RCS:

- Silicosis: Breathing in RCS can cause scarring of the lung tissue, a condition referred to as silicosis. This scarring can result in shortness of breath. The effects of silicosis are permanent and may continue to develop even after exposure has stopped
- Lung cancer: If a worker has a lengthy exposure to high levels of RCS, lung cancer may develop
- Chronic obstructive pulmonary disease (COPD): COPD is a term that refers to a chronic lung condition that may result from breathing in RCS. It can lead to breathing difficulties
- Kidney disease: There is evidence that silica exposure can cause kidney disease

CONTROLLING RCS

Eliminate

- Use alternative products where possible e.g. using metallic shot instead of sand when blasting

Isolate / Engineer

- Use wet suppression methods to keep RCS out of the air
- Clean using a water hose or vacuum system rather than sweeping or using compressed air

Admin / PPE

- Set up exclusion zones to keep as many people as possible out of the dusty area
- Schedule potential high exposure work for calm days and when as few people as possible will be around
- Use suitable respirators for protection against the dust. The type of respirator should be carefully chosen; ask your safety manager or an occupational hygienist for assistance
- Carry out fit testing for each worker who wears a respirator requiring a seal against the face
- Keep the RPE on until overalls etc have been removed. Try and take these items off to avoid creating more dust
- Wash face and hands immediately after working with RCA and before eating, drinking, or smoking

EXPOSURE MONITORING

Where there is evidence or concern that dust exposures could be harmful, exposure monitoring should be carried out by an occupational hygienist or other suitably qualified person.

HEALTH CHECKS

Workers exposed to dust levels requiring the use of PPE as a control should be offered annual lung function checks.

TRAINING

Workers who are regularly exposed to RCS must be trained in:

- the health risks from their exposure
- how to use the identified controls including LEV use and maintenance
- Appropriate use and care of PPE, including clothing and RPE

9.1.3 WOOD DUST

Wood dust can have additional risk of negative health effects due to the presence of glues, resins, formaldehyde, or other treatment chemicals on the wood particles. All workers regularly exposed to wood dust should receive spirometry testing as part of their annual health check.

Where we expose the workers of other companies (contractors, labour hire) to wood dust they should be advised of the risk and that health checks are required.

HEALTH EFFECTS

- Breathing in wood dust can cause breathing problems, occupational asthma and lung cancer
- Swallowing wood dust will cause coughing. High exposures can affect the intestines, bloodstream and internal organs
- Skin contact with wood dust can cause skin ulcers, irritation and dermatitis
- Dust in the eyes can cause irritation and damage

CONTROLLING WOOD DUST

Eliminate

- Can we buy pre-cut or prepared materials?

Isolate / Engineer

- Local exhaust ventilation (LEV) with appropriate settings and filters for the size and type of dust. These need to be regularly checked and maintained (which may require occupational hygiene advice). They should be electrically safe for wood dust to avoid the potential for fire or explosion
- On-tool extraction
- "Ban the Broom" – use a vacuum to remove dust where possible (wear suitable RPE when emptying bags)
- If you must sweep, damp the dust down. Do not use blowers or compressed air to move dust

Admin / PPE

- If above-the-line controls cannot practicably be used, or aren't working, then respiratory protection equipment (RPE) must be used
- Each worker must get their RPE fit tested by a competent person
- Keep the RPE on until overalls etc. have been removed. Try and take these items off carefully to avoid creating more dust
- Wash face and hands immediately after working with wood dust and before eating, drinking, or smoking

WORKPLACE EXPOSURE MONITORING

Where there is evidence or concern that dust exposures could be harmful, exposure monitoring should be carried out by an occupational hygienist or other suitably qualified person. The report should suggest control options as well as measure exposure- discuss with your safety manager if you need assistance.

HEALTH CHECKS

Workers exposed to dust levels requiring the use of PPE as a control should be offered annual lung function checks.

TRAINING

Workers who are regularly exposed to wood dust must be trained in:

- the health risks from their exposure
- how to use the identified controls including LEV use and maintenance
- Appropriate use and care of PPE including clothing and RPE

All workers exposed to dusts should get annual lung function tests.

9.2 Asbestos

Asbestos is a naturally occurring mineral made up of many small fibres. These fibres are very strong and are highly resistant to heat, fire, chemicals, and wear which is why asbestos has been a popular industrial material in the past.

Asbestos kills. Each year around 170 New Zealanders died from asbestos-related diseases, making asbestos the number 1 killer in workplaces. The main way people are exposed is by breathing in asbestos fibres; the fibres get into people's lungs and cause inflammation which can lead to scarring or even cancer.

Carrying out, directing, or allowing work involving asbestos or ACM is prohibited under the Health and Safety at Work (Asbestos) Regulations 2016 unless the work is undertaken in accordance with the Regulations.

Our work often involves asbestos, whether it be contaminated soils or working with asbestos containing products such as asbestos cement pipes. We also need to consider the risk from asbestos when doing maintenance / electrical work and demolition.

- Where friable asbestos may be disturbed during work, a Class A licenced asbestos removalist must be consulted. We cannot undertake friable asbestos removal as we do not hold a Class A removal licence
- Where soil may be contaminated with asbestos, contact a SQEP for advice
- Where asbestos in a Wellington Water-owned or occupied building is concerned, review the Asbestos Management Plan that relates to the building/structure

9.2.1 WORK TYPE

During the work planning stages we must understand what type of work involving asbestos we are to carry out. You can see in the diagram on the next page (taken from the ACOP) the respective work types are either 'Asbestos Related' or 'Asbestos Removal'.

Each work type has different requirements for licensing and controls:

- If our work involves transporting asbestos contaminated waste from the removal site to an approved landfill, we are conducting asbestos related work
- If our work involves asbestos but is maintenance and servicing work or response to an emergency for example, this work is asbestos related work
- If our work involves the removal of asbestos, it is asbestos removal work, the quantity and type of asbestos will determine if you need a licence to remove the asbestos and if so, the type of licence required

Asbestos Awareness Training allows workers to remove up to 10 m2 of non-friable asbestos per job/ project. When removing >10 m2 (over the entire project or job) of non- friable asbestos containing material, or any quantity of friable asbestos a competent asbestos removal contractor must be brought in.

9.2.2 PERSONAL PROTECTIVE EQUIPMENT

- PPE must be supplied, and it must be worn when working with asbestos
- Before starting any work ensure all PPE is in good condition
- Disposable PPE is best to prevent asbestos contamination
- Required PPE:
  - Disposable coveralls
  - Gloves
  - Footwear/ booties
  - Respiratory protective equipment (P2 minimum)
  - Other PPE required for the job and jobsite

9.2.3 RESPIRATORY PROTECTIVE EQUIPMENT

- Respiratory protective equipment must be worn when working with asbestos
  - A disposable (single use) P2 mask with a valve is the minimum needed.
  - Suitable for short tasks or light work where asbestos is present
  - P1 or 'nuisance dust' masks are not suitable and will give a false sense of security
  - Must be disposed of as asbestos waste after use
- P3 Half face respirators offer better protection
  - Suitable for longer tasks, or more intensive work with asbestos
  - Must be wiped down after use and P3 filters disposed or stored separately for asbestos use only
  - Need to be stored properly so they are not damaged
  - Should not be shared among workers
- Full faced masks can also be used
- Your mask must be the last piece of PPE removed when working with asbestos

9.2.4 WORKING WITH ASBESTOS PIPES

- Remove non-essential people
- Segregate the asbestos work area with fencing and warning signage
- Plan the work to minimise the number of cuts and disturbance of the pipes
- Remove AC pipes in sections, splitting at collars or sleeves
- Keep the pipe wet
  - Use a spray bottle of water or low-pressure hose
- Manually cut with hand saws
- **DO NOT USE POWER SAWS**
  - e.g Concrete cutter, Reciprocating Saw, Circular saw, etc.

9.2.5 REMOVAL AND DISPOSAL

- Remove pipes and slurry from cutting area to prevent them from drying
- Wrap pipes/ slurry in 200-micron heavy duty plastic
- Place the wrapped material in another 200-micron heavy duty plastic bag and goose-tie the neck
- Label the bag "asbestos hazard – wear a respirator and protective clothing while handling contents"
- Visually inspect site to ensure NO asbestos remains
- Take the bagged waste to an approved asbestos waste disposal area (or store in an approved place until it can be disposed of)
- Asbestos waste is to be disposed of appropriately and legally
  - Silverstream, Southern and Spicer landfills accept asbestos waste

9.2.6 SITE BREAK DOWN

1. CLEAN AS YOU GO

- Use a damp cloth to wipe down tools and surfaces
- Use each side of the cloth once
- It must be disposed of as asbestos waste

2. DOUBLE BAG ALL WASTE

- All waste, including disposable (single-use) masks and coveralls, cloths and plastic sheets should be double-bagged in heavy-duty plastic bags
- Twist the top of the bags tightly, fold the necks over (a 'gooseneck twist') and seal with adhesive tape so that the contents are fully enclosed
- Mark the outer bag as asbestos waste
- Dispose at approved Asbestos waste facility – check local authority

3. PHOTOGRAPH & NOTE REMOVAL IN MAXIMO

- Write the address and Work Order Number on the outside of the bag once
- If Work Order Number is not available a minimum of the address must be written on the bag
- Take a photo and then attached to the relevant Maximo Work Order

4. LOOK CLOSELY AT THE WORK AREA BEFORE LEAVING

- There should be no visible dust

5. REMOVE PPE LAST

- Make sure you leave your respirator on until all other PPE items have been removed and cleaned or disposed

9.2.7 TRANSPORTING ASBESTOS

- Asbestos waste must be properly packed for transport in 200-micron polythene bags or sheeting
- Properly packaged asbestos waste is not considered dangerous goods for transport
- It is recommended that the vehicle is labelled as 'Asbestos Containing Material'

9.3 Noise

NZ requires hearing protection to be worn when exposure reaches 85dB(A) for the equivalent of 8 hours. If you need to raise your voice to be heard by someone 1m away, that is roughly 85dB(A).

9.3.1 NOISE EXPOSURE LIMITS

An increase of 3dB(A) is twice as much noise exposure. This means the following levels and times all create the same health risk as 85dB(A) for 8 hours

Noise level dB	Time equivalent to 85dB(A) over 8 hours	Examples of tools
88	4 hours	Excavator (85 dB) Portable generator (85 dB) Grinder (86 dB) Welding machine (85-90 dB)
91	2 hours	Crane (90 dB)
94	1 hour	Compactor - no cab (94 dB) Masonry saw (95 dB)
97	30 mins	Quick-cut saw (96 dB) Jack hammer (96 dB) Circular saw (96 dB) Hammering (96 dB) Chipping concrete (97 dB)
100	15mins	Impact wrench (108 dB)

Where possible, exposure to noise should be managed by above-the-line controls rather than by relying on PPE.

Examples:

Eliminate

- May not be possible

Substitute

- Use a less noisy process e.g. hydraulics rather than pneumatics

Isolate

- Box in the noise e.g. a compressor, or provide a quiet refuge for operator e.g. vehicle cab

Engineer

- Maintain gear and buy quiet

9.3.2 NOISE SURVEYS AND PERSONAL MONITORING

Where there is an indication that a work area is noisy enough to cause a problem then a noise survey and / or personal monitoring should be carried out. This assessment can be as simple as walking through the area and seeing if people need to shout, or if they report reduced hearing by the end of the day. Sample noise measurements may be done using an app to give an indication of levels, but formal sampling must be carried out by a suitably qualified occupational hygienist or another specialist. Surveys should be repeated at least every five years or when an operation materially changes.

Where noise exposure is higher than permitted the hierarchy of controls must be worked through, although PPE may be the short-term solution.

Where PPE is still required after other controls then workers' annual health checks must include hearing checks

9.3.3 HEARING PROTECTION

EAR PLUGS

Attenuated moulded plugs are a good solution for people who need hearing protection most of the time. These allow normal conversations without needing to remove the hearing protection.

These should be fitted using the "Roll, Pull and Hold" technique, using clean hands

1. Roll

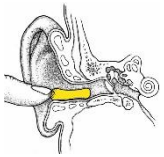
Roll the earplug into a small, thin "snake" shape. Try and avoid creating any creases.

2. Pull

Pull the top of your ear up and back with your opposite hand. This will make your ear canal straighten out. Slide in the rolled-up plug.

3. Hold

Hold the earplug in with your fingertip and count out loud to 30 while the earplug expands. Your voice should become muffled when the plug has made a good seal.



4. Check

The ear plug should be far enough in your ear so that you cannot see more than the outer end of the plug in a mirror.

Put your hands over your ears – if things sound different then the plug hasn't created a proper seal and needs re-fitting.

Refer to Classified Hearing Protectors - WorkSafe

EARMUFFS

The seal and sponge must be replaced if they become cracked or lose flexibility. This can be checked by a visual inspection and "squidging" the foam.

HEALTH CHECKS

Workers who are exposed to noise levels requiring the use of PPE as a control should be offered annual hearing checks.

TRAINING

Workers who are regularly exposed to noise must be trained in:

- the health risks from their exposure
- how to use the identified controls
- appropriate use and care of PPE

9.4 Vibration

9.4.1 HAND ARM VIBRATION

Hand-arm vibration is vibration transmitted into workers' hands and arms. This can come from use of:

- hand-held power tools (such as grinder, chain saws jack hammers),
- hand guided equipment (such as powered lawnmowers, weed eaters)
- by holding materials being worked by hand-fed machines (such as pedestal grinders)

Regular and frequent exposure to hand-arm vibration can lead to two forms of permanent ill health known as:

- hand-arm vibration syndrome (HAVS)
- Carpal tunnel syndrome (CTS) Symptoms and effects of HAVS include:
  - tingling and numbness in the fingers which can result in an inability to do fine work (for example, assembling small components) or everyday tasks (for example, fastening buttons)
  - loss of strength in the hands which might affect the ability to do work safely
  - The fingers going white (blanching) and becoming red and painful on recovery, reducing ability to work in cold or damp conditions

CONTROLS

- Maintain equipment to reduce rattles and vibrations
- Rotate tasks to minimise long periods of exposure
- Consider the vibration levels produced when purchasing new equipment

WORKPLACE EXPOSURE MONITORING

Where there is evidence or concern that exposures could be harmful, exposure monitoring should be carried out by a suitably qualified person.

There are online calculators that can be used to assist in a risk assessment to identify whether monitoring is required.

Currently in New Zealand there are no exposure standards, and the UK guidelines are generally used as a reference. The report should suggest control options as well as to measure exposure; discuss with your safety manager for assistance.

HEALTH CHECKS

If workers are reporting symptoms of HAV they should be assessed by an occupational health nurse and possibly referred to a GP.

TRAINING

Workers who are regularly exposed to hand-arm vibration risks must be trained in:

- the health risks from their exposure
- how to identify and report symptoms
- the importance of job rotation and equipment maintenance

9.5 Temperature

Thermal comfort is when someone feels neither too hot nor too cold.

It is influenced by:

- Air temperature
- Humidity
- Radiant heat
- Air speed
- Physical activity
- Clothing

Factors like age, gender, health conditions, weight and medication can also make people more sensitive to high or low temperatures.

9.5.1 COLD ENVIRONMENTS

Clothing and PPE should be suitable for the conditions. "Merinie" or other thin hats can be worn under hard hats. Everyone should be able to take breaks in a warm area.

9.5.2 WARM / HOT ENVIRONMENTS

Where possible schedule high activity tasks for cooler areas of the day and provide rest areas in the shade. Everyone should have plenty of water and take responsibility to remain hydrated. Where possible wear a hat that provides protection from the sun.

9.6 Radiation

Radiation is the emission or transmission of energy in the form of waves or particles. This includes:

- solar radiation from the sun
- gamma radiation from a nuclear densometer (NDM)
- visible, ultraviolet and infrared radiation from welding arcs

9.6.1 SOLAR RADIATION

All workers on site should have access to sunscreen and be encouraged to apply it regularly when working in the sun. Sunhats and sunglasses should also be worn where appropriate; this needs to be balances with other risks on site e.g. the need for hard hats or goggles. Tinted Safety Glasses are available.

9.7 High Pressure Air or Fluid

Liquids and gases under pressure create a risk of high-pressure injection injuries (pressure source 40 bar / 600psi or higher) and flailing hoses if they are not secured. Both can cause serious injury or death. Risks may be from air, water, hydraulic fluid, paint, or contaminants within the line.

9.7.1 HIGH-PRESSURE INJECTION INJURY

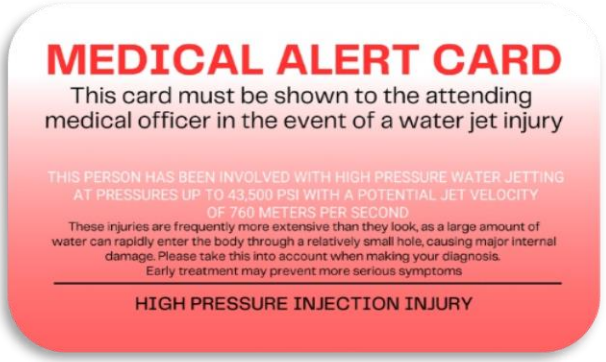
Whilst these are rare, relative to the use of high-pressure equipment, the effects are often under-estimated leading to lack of treatment and poor outcomes. The initial wound may appear small and be fairly pain-free, but injection injuries can cause a large amount of damage and inflammation if left untreated.

In the event of a high-pressure injection injury:

- Note the time of injury and what substance was injected
- If the SDS is available, get it. Can be searched online
- Take the person to hospital immediately. Someone should go with them to make sure the doctors understand what pressure and what substance was involved

The priority is to get the patient to a hospital where the patient can be seen by a hand surgeon or other surgical specialist. If the person starts to experience pain, this will likely mean that they require surgery. Often the injury can seem minor early on but has the potential to be serious.

Example of a high-pressure injection wallet card:



CONTROLS

Eliminate

- Don't use high pressure air or water to clean down clothing or skin
- Depressurise the equipment when not in use (when you can)

Isolate / Engineer

- Maintenance work should only be carried out on de-pressurised equipment with appropriate lock out, tag out procedures in place
- Hoses should be in good condition and rated for the pressure being used
- Keep the work area clear of any unnecessary people
- Shrouds, guards, and restraints (whip checks or air fuses) must be used where applicable
- Use cardboard or wood to find a leak, not your hand
- Keep body parts away from the pressure outlets whilst pressurised (e.g. spray gun tips or air duster)
- Always point the equipment away from yourself, and not towards other people

Admin / PPE

- Workers using high pressure equipment should understand the risks and how to use the equipment to reduce their exposure
- Consider preparing a card for workers to take with them in the event of an emergency (see paint marking example)
- PPE should be appropriate for the task and include robust gloves & eye protection.

It's important to keep PPE clean to reduce the chance of infection and people should remember that while it won't necessarily prevent a pressure injection it will reduce the energy entering the body.

9.8 Gases, Fumes, and Vapours

Gases are substances that are in a completely gaseous state at normal temperatures and pressures. Some liquids or solids have an associated gaseous phase which is called a vapour. Smoke is a fine solid formed by incomplete burning. Fumes are fine airborne particles produced when a solid vaporises and condenses, e.g. during welding.

The Safety Data Sheet (SDS) should be referred to for individual hazardous substances but often effects will be felt in eyes and lungs.

Common risks within our business include:

- Diesel fumes
- Hydrogen sulphide (from wastewater or rotting vegetation)
- Welding fumes
- Solvents (road marking, laboratories)
- Chlorine gas

A common above-the-line control for gases, fumes and vapours is local exhaust ventilation (LEV) or general ventilation.

Design factors need to include:

- Is the hazardous material heavier or lighter than air?
- How is the work done? Ventilation should be set up so that the worker is on the opposite side of it, so that fumes or vapours aren't being extracted past the worker's breathing zone
- Where is the ventilation exhaust outlet? It needs to be an appropriate distance from other work areas or air intakes

WORKPLACE EXPOSURE MONITORING

Where there is evidence or concern that exposures could be harmful, exposure monitoring should be carried out by an occupational hygienist or other suitably qualified person.

The report should suggest control options as well as measure exposure; discuss with your safety manager if you need assistance.

HEALTH CHECKS

Workers exposed to gases, fumes and vapours should be offered annual lung function checks.

TRAINING

Workers who are regularly exposed to gases, fumes or vapours must be trained in:

- the health risks from their exposure
- how to use the identified controls, including LEV use and maintenance
- Appropriate use and care of PPE, including clothing and RPE
- How to choose the correct RPE and filters for the hazards they are at risk from

9.9 Diesel

Diesel can cause irritation and dermatitis if it is in contact with skin for a period of time. Gloves should be worn when handling diesel and changed if they become contaminated.

Diesel exhaust fumes have been classified as carcinogenic and may be a risk in confined areas such as tunnels.

Where exposure cannot be prevented, we should get levels measured to allow a risk assessment to be completed.

Controls to be considered are:

- extraction fans air vents
- turning off engines when not required
- RPE (as a last resort)

9.10 Hydrogen Sulphide

Hydrogen Sulphide (H2S) is a colourless gas that is heavier than air, corrosive, flammable, explosive and VERY poisonous. It smells like rotten eggs at low levels but can't be smelt at high levels- it can only be detected for sure with a gas detector.

It can sometimes be found in bitumen, some geological areas such as Rotorua, also where there has been rotting vegetation.

It is present generated in the wastewater network from the breakdown of sewerage. It can be present in the stormwater network if there have been sewerage overflows or the breakdown of vegetation.

H_2S Concentration	Symptoms
0 – 5ppm	Rotten eggs can be smelt
20ppm	Fatigue, dizziness, headaches
50 – 100ppm	Eye and airway irritation
100ppm	Loss of smell (so cannot identify higher exposures without a gas detector)
100 - 150ppm	Coughing, eye irritation. Exposure for more than 15 minutes can cause drowsiness and then increasing symptoms. Exposure for 48 hours may cause death
200 – 300ppm	Marked conjunctivitis and respiratory irritation if exposed for more than an hour
500 – 700ppm	Collapse in 5 minutes. Death within 30 – 60 minutes
700 – 1000ppm	Immediate collapse within 2 minutes. Death within minutes

Where we identify that H2S could be a risk we must have a gas detector running whilst working. If it alarms, leave the area, and seek assistance.

If someone has passed out, DO NOT try to rescue them without checking for gas otherwise you may end up in danger too. H2S is heavier than air so we need to be particularly cautious if a trench has been open overnight and H2S could have accumulated.

9.11 Chlorine

Chlorine may be used in drainage and water treatment works. When it enters the body through breathing, swallowing or skin contact, it reacts with water to create acid.

Most harmful exposure is caused by breathing. Symptoms may include airway irritation, wheezing, coughing etc. Breathing high levels of chlorine causes fluid build-up in the lungs, a condition known as pulmonary edema. The development of pulmonary edema may be delayed for several hours after exposure to chlorine.

Exposure to chlorine can be controlled by following work methodologies, maintaining good ventilation, and having gas detectors that have a chlorine sensor.

If you think you are being exposed to chlorine quickly move out of the area where the exposure is happening. Wash any affected external areas with clean water. Seek medical attention.

If working at a water treatment plant, ensure you are familiar with the chlorine emergency response plans and know where the evacuation zones are.

9.12 Concrete

Wet cement is a risk to skin due to its highly alkali nature; this is also why it is a risk to the environment. The water from it can cause alkali burns and hexavalent chromium in it can cause irritation and dermatitis. Dry cement can cause lung problems

Exposure to wet cement can be reduced by:

- using machinery to deliver and place
- using long handled tools
- waterproof gloves and barrier cream

Exposure to dry cement can be reduced by:

- careful addition of dry powder when mixing
- wet cutting cured cement
- on tool dust extraction
- correctly fitted RPE

If skin is exposed to wet concrete or the water from it, then the exposed area should be rinsed for at least 20 minutes or until the pH is neutral. Serious burns require urgent medical attention.

9.13 Legionella

Legionella bacteria occurs naturally in the environment but grows well in some conditions. Symptoms of legionellosis are similar to those of a cold; coughing, shortness of breath, fever, muscles aches or headaches and in a severe infection, Legionnaires' disease- as a severe form of pneumonia- can require hospital treatment and can be fatal. Exposure is usually from compost, soil or water droplets.

COMPOST/SOIL

- Store out of sunlight
- Open bags slowly, direct the opening away from your face to avoid breathing in any mix
- Wet soil or compost gently to avoid stirring up droplets or dust
- Consider wearing RPE

WATER

Run emergency showers long enough to clear the whole pipe system- legionella can multiply in water stagnant in pipes

If a worker reports cold or flu-like symptoms after a potential Legionella exposure, they should be taken straight to the GP and the GP advised of the potential exposure. If Legionnaires' disease is confirmed, then this is notifiable to WorkSafe.

9.14 Leptospirosis

Leptospirosis is an infectious disease transmitted from animals to humans (a zoonosis) and from animal to animal by infected urine. Leptospirosis is easy to catch from an infected animal, but it is rarely transmitted from person to person.

People can catch leptospirosis when they are exposed to the urine of infected animals. Cuts, sores, and grazes on the skin increase risk of infection, as does licking your lips and eating or smoking before washing and drying your hands.

Leptospirosis symptoms are very similar to the flu and can be mild or severe e.g. tiredness, headaches or coughing. Ongoing symptoms include skin rash, breathing problems and chest pain. Severe symptoms can show as jaundice, meningitis, pneumonitis, and miscarriage.

Anyone who experiences symptoms, or suspects they have been exposed, needs to see a doctor within 24 hours to get tested and start antibiotic treatment. They need to tell the doctor that leptospirosis may be the cause of their illness, as some doctors may not be familiar with the symptoms, particularly those in cities.

If a worker receives a needle stick injury, then they should be taken to the GP to lodge an ACC claim and a precautionary blood test as per GP direction. EAP should be offered, and a discussion had about the need for using condoms until the infection status is known.

9.15 Infection

If you are showing signs of ill-health you should work from home where possible, regardless of whether there is a pandemic warning in effect. Follow the WWL Covid-19 procedures, speak to your team leader or a member of the health and safety team.

9.16 Seeking Specialist Advice

Initial risk assessment should be carried out by the operational team working with the particular hazard. Where they identify risks that cannot be controlled by routine measures or risks that require specialist monitoring then their safety manager should be contacted.

On-site measurements and monitoring of health risks needs to be carried out by a competent person, although initial screening to assess the scale of the risk may be able to be done inhouse.

9.16.1 OCCUPATIONAL HYGIENISTS

Should be registered with NZOHS and, ideally, with HASANZ. They can measure and can advise controls for:

- Welding fumes
- Dust
- Noise
- Vibration
- Other chemical / fume exposures

9.16.2 HUMAN FACTORS / ERGONOMISTS

Registered with HFESNZ, and preferably HASANZ, they provide:

- workplace design
- fatigue / hydration assessments

9.16.3 OCCUPATIONAL HEALTH NURSES

Preferably registered with NZOHNA, they provide:

- Pre-employment health assessment
- Annual health checks
- PPE and RPE fit testing
- Proactive pain or discomfort assessments
- Post injury assessment

9.16.4 Occupational Therapist / Physiotherapist

They provide:

- Manual handling assessments
- Return to work planning
- Workplace assessments

10. Significant Environmental Risks

Everyday Wellington Water undertake works that carry environmental risk. It is important that we recognise how the use of resources, and our discharges to air, land, and water, can all have negative impacts on our community and environment.

- **We always control our containments**
  • Asbestos • Dust • Silt • Pathogens •

When identifying environmental risk, we need consider how our works could create risks to air, risks to water, or risks to land.

- Proactively assess and manage all potential risks to the environment in conjunction with our safety risks by using the Hierarchy of Controls – Eliminate, substitute, isolate, engineering controls, administrative controls, PPE
- Ask the StaySafe questions – What am I doing? What could go wrong? How can I do it safely?... for the environment
- Ensure staff are well-trained, resourced and encouraged to do the right thing
- If in doubt stop what you are doing and talk to your supervisor or manager
- All significant environment risks must be included in the Risk Control Plan(RCP).

Never consider the environmental aspects of a job as just an 'add-on'

10.1 Environmental Compliance Requirements

There are numerous local, regional, and national rules, regulations and requirements governing our activities. To avoid disruption to work, harm to the environment, or enforcement action, it is critical that we are always aware of and are compliant with these requirements.

Our work is controlled, affected, and regulated by:

- Local and regional council rules, including permitted activities
- Resource consents

We must be aware of the requirements relevant to our jobs and make sure our subcontractors have the same knowledge. Where a consent applies it must be available on site and all workers on-site aware of the permitted activity standards that are relevant to their tasks.

10.2 Managing Environmental Risk

During most of our daily activities there is some risk that a spill, leak, or something harmful could be released to the environment. It is everyone's responsibility to ensure that their actions, or inactions, do not result in damage or harm to the environment.

Simple and effective measures to manage the risk:

- Have a site-specific Environmental Management Plan in place
- Keep the risk small by minimising the potential of environmentally hazardous discharges
- Ensure adequate sump protection devices are available and effectively installed
- Ensure appropriate spill kits are available on-site and fully stocked
- Any contaminated waste must be disposed according to the instructions on the Safety Data Sheet

10.3 Spills

Ensure spill kits are:

- Readily available on-site
- Fully stocked with appropriate type of containment for the spill risks present on-site

10.5 Sediment

Sediment can pollute water and destroy or deteriorate habitats and landscapes. Where this is a high risk, we should complete a formal sediment and erosion plan, during pre-works planning (check any consent or rule requirements, and notification requirements).

Any work that disturbs soil may require sediment controls. This should be based on a site risk assessment. Controls may also need regular maintenance to be effective and must be regularly checked throughout the job.

- Control site access and exit, contour drains, protect all sumps, use silt fences, settling ponds, decanting earth bunds
- Have a staged earthworks approach to minimise the amount of open area
- Install, regularly monitor, and maintain effectiveness of required controls – especially before and after significant rain events
- Consider the need for sediment and erosion control training for workers on-site or specialist support.

SEDIMENT CONTROLS

- Witches Hat sump guards are specifically designed to let water flow through whilst capturing the majority of sediment. They can be cleaned out and reused a number of times. Best used in conjunction with filter socks or sandbags
- Filter socks or sandbags are used to create barriers(dams) that slow, control, and trap sediment discharge
- The number of 'dams' that are required depends on the volume of discharge and gradient of the road
- Inflatable pipe plugs which come in all sizes and will stop flow out of the sump, especially effective if you have a jet vac on site, sucking from a sump, while you are working

10.6 Concrete, Cement, Lime

These products are highly toxic to aquatic life; they can also accumulate and cause sedimentation or blocking of drains.

The chemicals dissolve in water so cannot be removed by spill kits, therefore we must ensure they do not enter any sump or waterway at all.

- Work in good weather where possible and check forecasts
- Divert runoff to an open or grassed area so no runoff can enter a waterway or drain
- Collect runoff by using vacuum or sucker trucks and dispose of at an approved site.
- Have a plan in place and equipment on hand in the event of a discharge or weather event, and practise it if there is a high risk

CONCRETE AND ASPHALT CUTTING

Concrete cutting waste slurry is very corrosive and asphalt cutting wastes contain environmental toxins, both can be very harmful to the environment and are practically impossible to filter or dilute to safe levels

- Divert the slurry back into the area being cut
- With the exception of the Witches Hats, concrete slurry should be managed in the same way as we manage sediment
- Do not used filter cloth (Bidim - Geotexiles) in drains/sumps as it does not filter sediment or concrete slurry
- The road/drainage channel need to be cleaned and all trapped discharge removed(shovelled and swept) before removing the environmental controls

10.7 Emulsion

When emulsion mixes with water it cannot be separated. We must focus on preventing spills and runoff.

- Do not start if wet weather is coming or conditions are not suitable for a full cure before rain
- Have containment controls and clean-up procedures in place before sealing starts and do not remove them until a full cure has been achieved
- No emulsion or brown water discharges to any sump, waterway or land

11. Contractors / Subbies

11.1 Pre-qualification

All subcontractors must be prequalified. This is the administrative process of getting a subcontractor into our system so that their basic information can be confirmed, and their management capacity assessed.

The contractor assurance system (CAS) is used to manage this process. If a subcontractor is to be used, check whether they are already in the subcontractor register.

11.2 Selection

Selection should be based on risk as well as on cost.

CAS and the capability assessment will provide general information about the subcontractor's commercial, health and safety, quality and environmental management systems. Selection should also consider information from CAMs reports, previous audits and annual or post-contract review information where available.

Depending on the tasks being subcontracted out, further information may need to be considered such as worker competence and plant management systems. Where subcontractors do not have sufficient risk management in place then we must plan to monitor the subcontractor's work practises.

11.3 Engagement

Once a subcontractor has been selected, we must set up or check:

- They are set up as a vendor in JDE
- Correct Insurances are in place
- Appropriate contract / agreement is in place

11.3.1 JDE SET UP

Arrange this via the local finance team.

11.3.2 INSURANCES

Common insurance information will be available in CAS but certain projects may require specialised insurance. Meeting these requirements should be made a special condition in the contract.

11.3.3 CONTRACTS / AGREEMENTS

Some subcontractors will already have contracts or agreements in place, and these are visible through CAS. However, in many cases an agreement should be tailored to meet specific requirements, or special conditions added to the schedules.

Refer to the Subcontractor Management Framework / Subbie Manual (when available) for current contract options.

11.3.4 COMPETENCY

Subbies must have a system to ensure all workers are trained and competent for the tasks they are performing. We will confirm this by sampling via on site checks.

11.3.5 SUBLET APPROVAL

(Use of subcontractors by a subcontractor)

Written approval must be granted for a subcontractor to further subcontract out work for the NMT; this includes situations where all subcontractors are on site together. Where such a request is received the sublet approval template should be used and loaded into CAS against the original subcontractor record.

Consideration should be given to adding the second subcontractor into CAS for completion of the capability assessment, insurance check and induction process.

11.4 Induction

A video-based site induction is available. This must be viewed by all subbies before they start working on site, and they must also be taken through the day's risk control plan if working with our workers.

Large sites, or high-risk tasks, may also require a more specific induction on a case-by-case basis.

Refer to Fulton Hogan Subbie Induction

11.5 Engagement

All sub-contractors must have a framework agreement in place and be issued with a valid work instruction before undertaking any work for NMT.

11.6 Monitoring / Review

The selection and engagement process will allow for a risk-based decision to be made about site monitoring and audit requirements. All subcontractors must be audited on site at least annually, but monthly or weekly visits may be appropriate for high risk or high-profile work. Similarly, where a subcontractor's capability assessment identified potential management system gaps more frequent monitoring may be required. Operator licenses can be checked simply by asking to see them.

11.6.1 SUBCONTRACTOR AUDITS

The hiring manager is responsible for ensuring that an annual on-site (not just desk-top) audit of the subcontractor's systems and compliance is completed. This audit should cover, but not necessarily be limited to, the following items:

RISK ASSESSMENT

That the subcontractor has a daily pre-start risk assessment system in place to identify risks to health and safety, and to apply appropriate controls to manage these risks.

PLANT CONDITION

That the subcontractor has a plant pre-start system in place to confirm that all plant is fit for purpose and in a safe condition to operate.

WORKER INDUCTION

That the subcontractor has a system in place to ensure that all workers assigned to our work have been through the Fulton Hogan subcontractor induction process.

WORKER COMPETENCE

That the subcontractor has a system in place to assess employee competence against task and task completion.

DRUG AND ALCOHOL IMPAIRMENT

That the subcontractor has a system in place to ensure that employees assigned to our work are not impaired through the use of drugs or alcohol.

INCIDENT RESPONSE

That the subcontractor has a system in place to ensure that all incidents, injuries and near misses are reported to Fulton Hogan, and to appropriate authorities such as WorkSafe or the NZ Police when required.

11.6.2 SUMMARY TABLE

Our minimum requirements and guidance for managing Contractors, Subcontractors, Labour Hire, Cartage, Dry & Wet Hire, Technical Services & Suppliers are set out in the Subbie Manual.

Contract Type		Contract	Pre-Qualification	Induction	Inspection/Audit	Review
Physical Works	Physical Work for external client e.g. earthmoving, construction, drainage, maintenance, vegetation control, surfacing works, traffic control, electrical work	Subcontractor/Framework Agreement	Yes	People – Induction Video & site orientation Plant – Yes	Yes – at least once in 12 months	Yes
	Physical Work direct for Fulton Hogan assets - High/ Medium Risk e.g. Plant / Fleet maintenance on site, Installs and repairs on site, Electrician/ Crushing & screening plants	Contracting Services	Yes	People – Induction Video & site orientation Plant – Yes	Yes – at least once in 12 months	Yes
	Physical Work direct for Fulton Hogan - Low Risk e.g. site security, cleaners, air conditioner maintenance, basic building maintenance, waste collection, grounds maintenance, servicing and maintenance OFF site (including vehicles), calibrations	Own T&C's or Letter of Engagement	No	People – Signing in on site/site rules Plant – Yes	No	No
Labour	Labour only (no plant) – temporary or casual basis from an Agency or from a contracting business	Labour Hire	Yes	People – Induction Video & site orientation	Covered as part of standard checks	Yes
Dry Hire	Dry Hire - Plant or Equipment only (no operators) from a Commercial Hire Company	Supply Agreement/ T&Cs (value dependent)	Yes – if value indicates Supply Agreement	Plant - Yes	Covered as part of standard checks	Yes - if on Supply Agreement
	Dry Hire - Plant or Equipment only (no operators) from another source e.g. contracting business	Letter of Engagement	No	Plant - Yes	Covered as part of standard checks	No
Cartage & Wet Hire	Cartage just delivering to site or working within a site e.g. transporting plant & equipment, materials & structures to site	Cartage Agreement / Letter of Engagement (dependent on value)	Yes – if value indicates Cartage Agreement	People – Induction Video & site orientation Plant – Yes	Yes - if on cartage agreement	Yes - if on Cartage Agreement
	Cartage but more than just delivery (performing an element of critical work) e.g. ice grit spreading, chip spreading. Includes Wet Hire e.g. a contracting company providing plant and an operator.	Framework Agreement or Letter of Engagement (dependent on value)	Yes – if value indicates Framework Agreement	People – Induction Video & site orientation Plant – Yes	Yes – at least once in 12 months	Yes - If on Framework Agreement
Technical Services	Technical - Design & drafting services including temporary and permanent works	Design Services	Yes - If work on-site	People – If work on-site Induction Video & site orientation Plant - Yes - if on-site	Covered as part of standard checks if on site	Yes
	Technical - Consultant providing professional advice or management services	Consultancy Services	Yes - If work on-site		Covered as part of standard checks if on site	Yes
	Technical - Specialist – Conducting technical tasks on site e.g surveying, lab testing, asbestos inspector	T&C's or Letter of Engagement	Yes - If work on-site		Covered as part of standard checks if on site	Yes
Suppliers	Supplier – Critical to works e.g. Pipes, concrete structures, wet concrete delivery	Supply Agreement	Yes	People – Signing onto site Plant - No	No	Yes
	Supplier – noncritical e.g. minor materials, consumables etc. Includes couriers, goods delivery	N/A – set up as vendor	No	People- Signing onto operational sites	No	No

12. Incident Response and Emergency Planning

12.1 Planning

During the planning stage of a job / project consideration must be given to tasks or processes that could lead to an emergency situation. This will prompt consideration of safety in design opportunities to remove these risk areas. Where it is not possible to eliminate the risk, consideration should be given to emergency planning such as rescue techniques and equipment.

Once the risk areas and emergency management procedures have been identified they can be built into the tender price and into the project management plan to allow relevant drills to be set up. Template emergency flipchart templates are available in portrait or landscape.

12.1.1 TRAINING

The planning above should include identification of training requirements for emergency management e.g first aid and rescue training.

Sites that are not training all workers in first aid need to complete an assessment of likely first aid requirements to ensure that they have sufficient coverage. If all workers are being trained, then this assessment does not need to be recorded.

For remote sites, or work with specific risks, consider the need for additional training, e.g Stop the Bleed or Paramedic level first aid.

12.2 Drills

Emergency drills should be identified by assessing what type of emergency is most likely to happen on site and preparing for that.

Refer to the Evacuation Scheme Information - FENZ

Examples include:

- Reinstatement crew – practice using a burns kit, understanding the burns card and calling the burns line
- Water crew – safely practice getting someone out from a trench collapse
- Drainage crew – practice a confined space rescue

Drills may also be required to comply with applicable location test certificate requirements.

Emergency drills need careful planning to ensure the safety of those involved. Consider the use of mannequins, coloured water etc. to provide realism with less risk. Some drills may require coordination with local emergency services. Frequency of drills should be determined by the risk, but many audits require an annual drill of at least one selected scenario.

Potential environmental incidents could include:

- Chemical, oil, and fuel spills
- Fires and explosions
- Encountering unexpected, contaminated soil
- Encountering unexpected cultural heritage sites
- Service strikes and leaks – water and wastewater networks

12.3 Building Evacuation Schemes

Relevant buildings that require an approved evacuation scheme include:

- Buildings where 100 or more people can gather
- Buildings where 10 or more people work
- Buildings where 6 or more people sleep, unless there are 3 or fewer households
- Buildings storing certain levels of hazardous substances

Some buildings may meet the exemption criteria for an approved scheme, but Fire and Emergency New Zealand still need formal notification of this.

13. Emergency Management

13.1 Safety

If the incident involves significant damage, serious personal injury or death, the scene must not be disturbed other than to:

- Save life or limit suffering
- Maintain access by the public to an essential service
- Prevent serious damage or loss of property

If it is safe to do so, immediate and appropriate action should be taken, e.g. barricading off the incident area, lock out/tag the item of plant or equipment.

If the incident is declared an Emergency, or is a serious injury or fatality, then the requirements of the site Emergency Response Plan must be executed.

WorkSafe NZ, or the police, will advise when the scene can be released.

13.2 First Aid / Medical treatment

Depending on the nature of any injuries, a trained first aider should make a call as to their ability to provide aid, or whether the injured person needs to be taken to hospital or to another treatment provider e.g. GP, physiotherapist.

A manager should accompany the injured person on that visit to help look after them. When the opportunity arises, they should explain our support of the return-to-work process and alternate duties.

13.3 Environment

If work uncovers archaeological remains or contaminated soil, then work must stop, and the work site be secured. Seek guidance from an archaeologist, cultural advisor, or contaminated land specialist. Work must not continue until the scene is released by an appropriate party, such as Heritage NZ or environmental specialist.

13.3.1 SPILL RESPONSE

- Minimise the risk by storing away from waterways and in bunded areas
- Be prepared with spill kits and trained staff
- If a spill occurs – ASSESS the risk, do you know what it is? Do you have the necessary PPE?
- Stop the source, block the leak, or contain the spill
- Clean it up and dispose of waste appropriately
- Report the incident to management
- Restock the spill kit

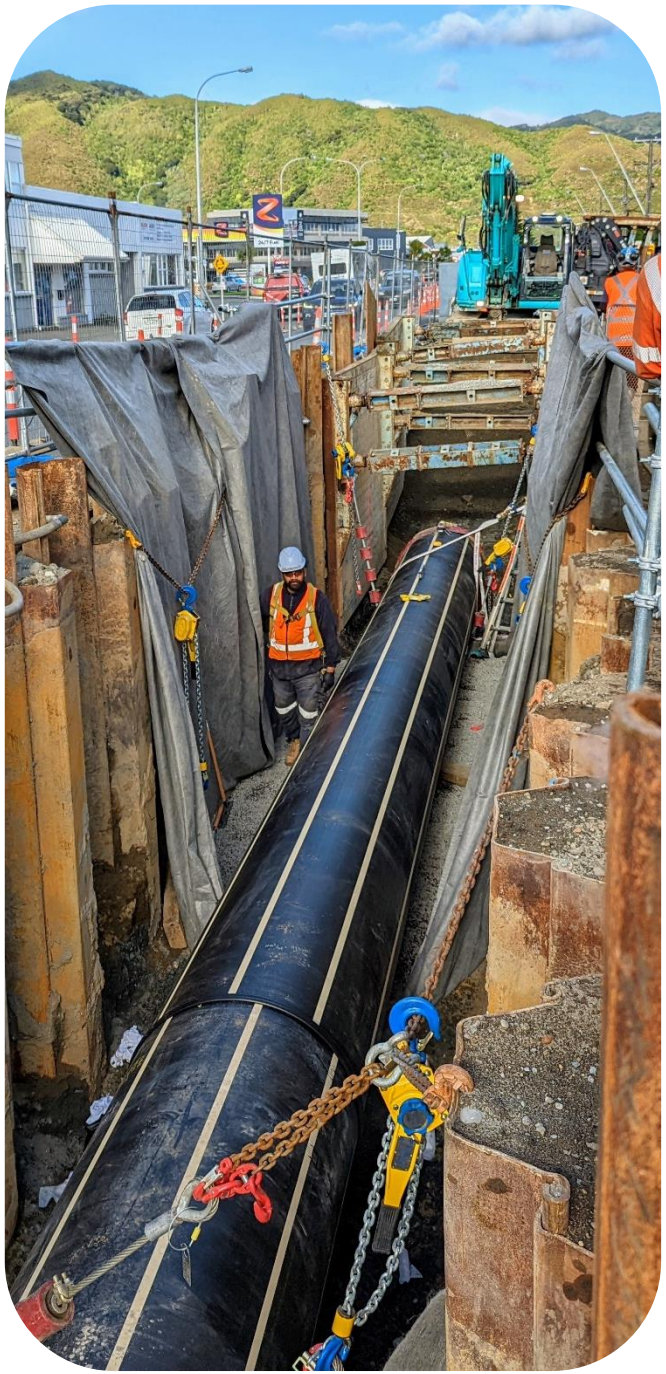
13.4 Third Party Incidents

When dealing with slips, blocked roads, or traffic incidents there can be a feeling of time pressure to solve the situation. We should still take our time to consider the risks posed by the work and should record this thought process. Ideally a risk control plan should still be completed but a verbal or video recording on a phone covering the Stay Safe questions will be acceptable in exceptional circumstances.

Where staff have had to attend serious third-party motor vehicle incidents, their immediate manager should follow up with them as soon as possible to debrief them and arrange for EAP support if required. Should there be any concern regarding the staff member's mental health after attending a third-party accident then their current work tasks should be re-evaluated.

13.5 Review and Learn

Once an incident has been safely dealt with there should be a debrief and investigation of events so actions can be taken to prevent reoccurrence.



14. Reporting

14.1 Incident Reporting

All incidents should be reported accurately as soon as possible after they've occurred. Reporting may be verbal initially followed up by a CAMs report – either Desktop based or using the MyVoice app.

Risk scores should be calculated via the sliding scales on MyVoice and checked using the Risk Assessment Matrix.

High or extreme risk rated incidents must be reported to the responsible manager before being entered into MyVoice / CAMs. Senior Management Notification must be sent within 24 hours of the incident.

Notification of injuries and/or Life Saving Action or Rule breaches is based on the risk of the event.

14.1.1 INJURY REPORTING

This should be based on risk rating. If any employee incurs an injury and is required to go to a medical provider, a copy of the CAMs information, Job Number, Needs Assessment and

Return to Work form and ACC45 is to be forwarded to the SDM and Health and Safety Advisor.

Personal information such as medical certificates or drug test results must not be added to CAMs, they can be stored on the personnel file.

14.1.2 NEAR MISS REPORTING

An unplanned event that did not result in injury, illness, property or environmental damage, rework or a non-conformance of any kind – but had the potential to do so. As an example, if a truck handbrake is left off, it rolls across the road and:

- It hits someone = Injury
- It hits a house = Damage
- Someone had to leap out of the way = Near Miss
- Someone had to leap out of the way and the truck hits the house = Damage
- No-one was around (but for time) = Near Miss

A third-party road traffic incident outside our worksites and with no potential to harm our staff is not a near miss for the purpose of incident reporting.

14.2 Incident Notifications

Reporting Requirements	Low	Medium	High	Extreme
CAMs entry within 24 hours	✓	✓	✓	✓
Automatic CAMs reports	Optional	Local	Local + Zone	Local + Zone
Senior Management notification (not CAMs)	X	X	within 24 hours	within 24 hours
Regulator (e.g. WorkSafe, Regional Council)	X	if notifiable	if notifiable	if notifiable

14.2.1 REGULATOR – HEALTH & SAFETY

Refer to the .Incident Notification Matrix and report all Health and Safety occurrences to the Health and Safety Team. Taking someone to hospital for treatment is a reasonable general trigger to consider notification requirements.

Non-injury events requiring notification must involve a serious risk to someone's health or safety from exposure to an unplanned or uncontrolled:

- Escape, spillage or leakage of a substance
- Implosion, explosion or fire
- Escape of gas or steam
- Escape of a pressurised substance
- Electric shock
- Fall or release from height of any plant, substance, or thing
- Collapse, overturning, failure, malfunctioning of any plant required to be authorised (e.g. cranes, pressure equipment)
- Collapse or failure of an excavation or any shoring supporting an excavation
- Overturn of plant (quarries only)
- This is not an exhaustive list; please contact the Alliance Health and Safety team for advice.

WorkSafe NZ require this notification as soon as possible after the incident; the scene must not be altered until notification is complete and we've been given approval to move anything.

14.2.2 NOTIFIABLE ELECTRICAL OR GAS INCIDENTS

Report immediately to WorkSafe NZ, with a written follow-up within 7 days of notification (Electrical and Gas Acts). Note: The Alliance Director must approve the release of any report.

14.2.3 REGULATOR – ENVIRONMENTAL

Report all environmental incidents to your Manager or Team Leader

14.2.4 CRASHES AT NMT WORK SITES (INCLUDING SUBCONTRACTORS)

In addition to internal notifications, a report is required to be submitted to the Road Controlling Authority or their Delegated Agent within 24 hours of the incident.

INCIDENT NOTIFICATION MATRIX

In the event of an incident involving the following situations, the following notifications are to be made

Immediate Notification Phone Call Within 1 hour	Rapid Notification Phone Call Within 2 hours

Type of Incident / Action	Person Involved in Incident/Occurrence: Ring Emergency Services (if required)	Person Involved in Incident/Occurrence: Contact your Line Manager/ Site Supervisor/ Project Manager	Line Manager/ Site Supervisor/Project Manager: Contact your Team Leader/ Manager/ Wellington Water Contact	Line Manager/ Site Supervisor/Project Manager: Contact Health & Safety Team
Injury (Immediate call)/Serious Near Hit	✓	✓	✓	✓
Discomfort/Pain		✓	✓	✓
Near Hit/Non – Injury Occurrences	✓	✓	✓	✓
Damage to property or environment	✓	✓	✓	
Motor Vehicle Accident	✓	✓	✓	
Criminal Act	✓	✓	✓	
Environmental Damage		✓	✓	

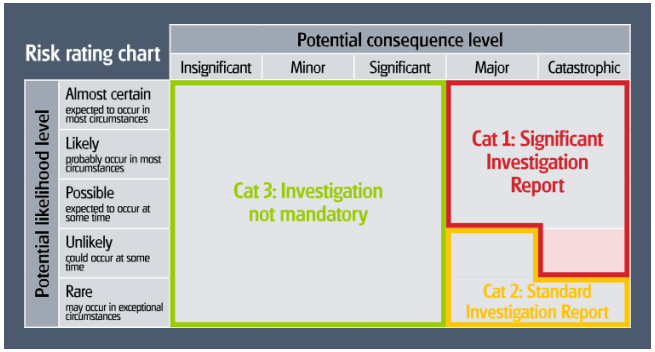
Report all Incidents/Occurrences/Something Goods in Q-Pulse/CAMs	By the next business day
Worksafe notification required if there has been a death, serious injury, serious illness, or a serious incident, contact the Health and Safety team to discuss potentially notifiable events	Within 1 hour
If you are unable to speak to your manager, contact the next manager in line with notification matrix	

If required, the Head of Health and Safety is available 24/7 on 021 416 208

Likelihood	Consequence: Insignificant	Minor	Significant	Major	Catastrophic
Almost Certain expected to occur in most circumstances	**Moderate** (100)- 11	**High** (500)- 16	**High** (1000)- 20	**Extreme** (5000)- 23	**Extreme** (10000)- 25
Likely probably occur in most circumstances	**Moderate** (50)- 7	**Moderate** (250)- 12	**High** (500)- 17	**High** (2500)- 21	**Extreme** (5000)- 24
Possible expected to occur at some time	**Low** (10)- 4	**Moderate** (50)- 8	**Moderate** (100)- 13	**High** (500)- 18	**High** (1000)- 22
Unlikely Could occur at some time	**Low** (5)- 2	**Low** (25)- 5	**Moderate** (50)- 9	**Moderate** (250)- 14	**High** (500)- 19
Rare may occur in exceptional circumstances	**Low** (1)- 1	**Low** (5)- 3	**Low** (10)- 6	**Moderate** (50)- 10	**Moderate** (100)- 15

15. Incident Investigation

15.1 Selecting the Level of Investigation Required



15.2 Summary of Requirements

	Category 1	Category 2	Category 3
Notifications	Verbal to immediate manager Senior Management notification	Local CAMs notifications	Local CAMs notifications
Investigation reporting tool	Significant Investigation report	Standard Investigation report	Nil required
Investigation exemption	Head of H&S	Head of H&S	N/A
Report due & actions in CAMs	30 days	15 days	N/A
Investigation team	Local independent lead e.g H&S Team or Manager from different area Industry specialist where relevant H&S team will lead for extreme rated events	Local lead Industry specialist where relevant	N/A
Peer review	Yes	Yes	N/A
Alert expected	Yes	Local decision	No

15.3 Investigation teams

Lead investigators should be chosen based on experience in the industry area or ability to provide independent advice. The Alliance Director is responsible for reviewing and signing off the investigation and forwarding significant investigation reports to their manager for review. By signing reports managers are confirming that the recommendations will prevent a repeat of the incident and that the highest-level controls have been considered.

15.4 Learning from incidents

All incidents should be considered as important learning opportunities. Means to prevent an incident from reoccurring should be recorded in CAMs and implemented accordingly.

Once signed off, the report should be attached to the CAMs case (unless legally privileged, see previous chapter) with a clear title and emailed to the Health and Safety Advisor. Any actions identified must be entered into CAMs; the assigned manager will be responsible for closing out the actions within the timeframes.

Recommendations and actions must focus on above the line controls.

15.4.1 SHARING INFORMATION WITH REGULATORS

The legal team should be contacted for formal or information requests for investigation reports. Where a Duty Holder Review is requested, this process requires approval at CEO level, via the legal team.

15.4.2 LOCAL ACTIONS

Record in CAMs with who is responsible, by when and verify effectiveness before closing the action.

15.4.3 Investigation Analysis Tools

The investigator / investigation team has freedom to choose how they investigate and analyse their findings e.g 5 whys, fishbone, bowtie, or ICAM etc. In order to provide easy interpretation across the whole business the findings must be written up in the standard or significant investigation report formats.

15.5 Alerts

Alerts are used to communicate any incident that impacts on our business and as triggers for "lessons learned" to review, update and continually improve our business practices and processes

15.5.1 SAFETY ALERTS

Safety Alerts shall be used to communicate learnings from any regional / project formal investigation following an incident or safety improvement idea.

Extreme, High, Medium and Low Risk incidents qualify for Hazard Alerts, however the expectation is that high and extreme rated incidents will always generate an alert.

Learning's from Safety Alerts are for information and educational purposes and are to be implemented on the basis of need at the discretion of the regional / project manager.

15.5.2 RED ALERTS

Red Alerts shall be used to communicate the results of major incidents that impact on our business. Learning's from Safety Red Alerts are mandatory directives, where preventative and/or corrective actions are to be implemented as directed.

15.5.3 GREEN ALERTS

Green Alerts shall be used to communicate the results of major environmental incidents that impact on our business.

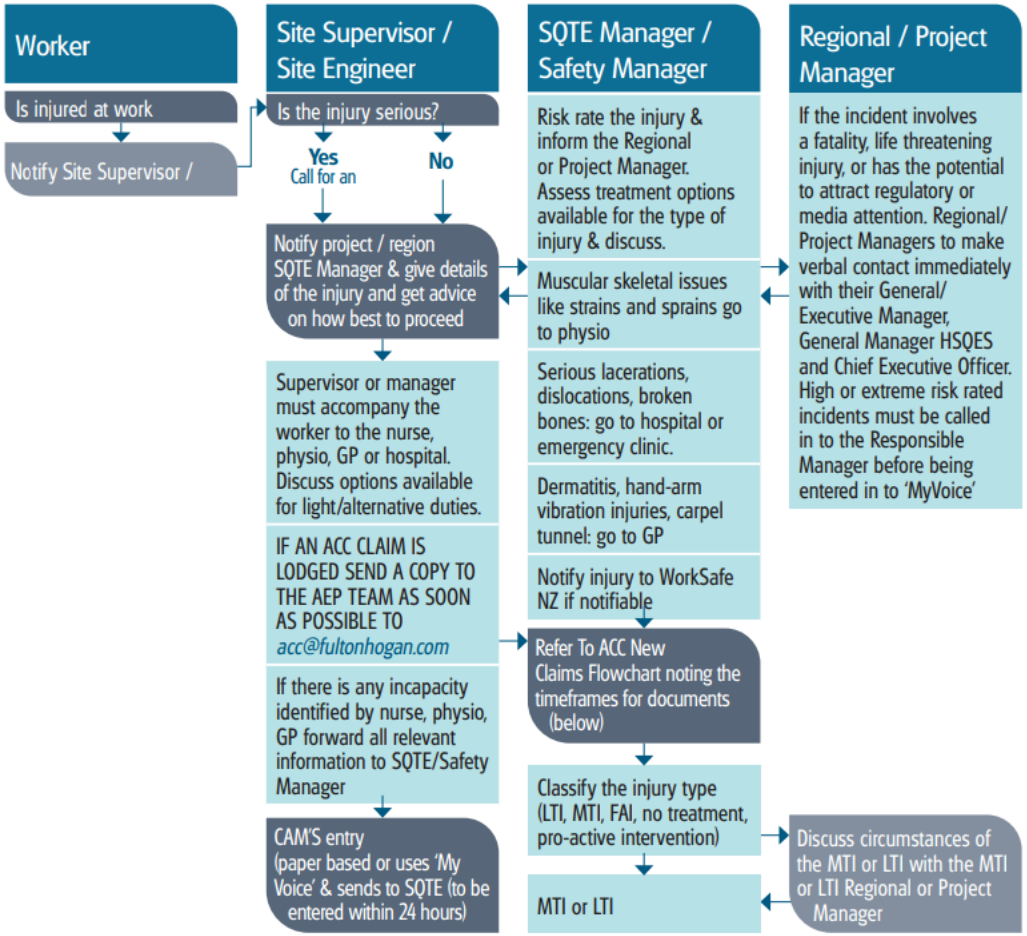
Learning's from Green Alerts are mandatory directives to be implemented within all work carried out by regions/projects.

16. Rehabilitation and Return-to-Work

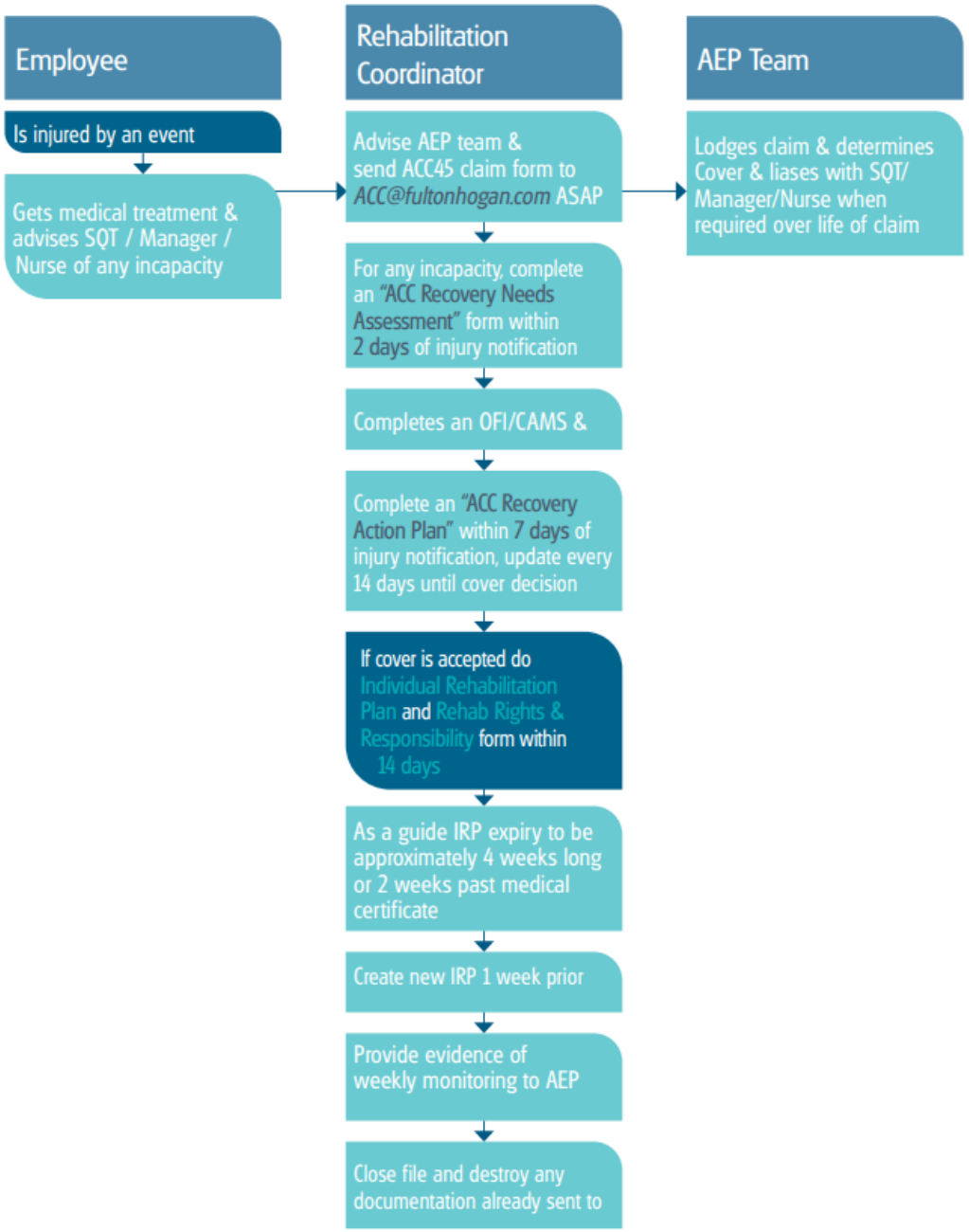
It is important all employees in the Network Maintenance Team are treated the same, and receive the same support if they become injured, require rehabilitation or a return-to-work plan. While we have tried to amalgamate all processes for the Network Maintenance Team, under the hood there are some differences that remain unique to how each organisation achieves this outcome, for the time being.

16.1 Work Injury/Ill-health

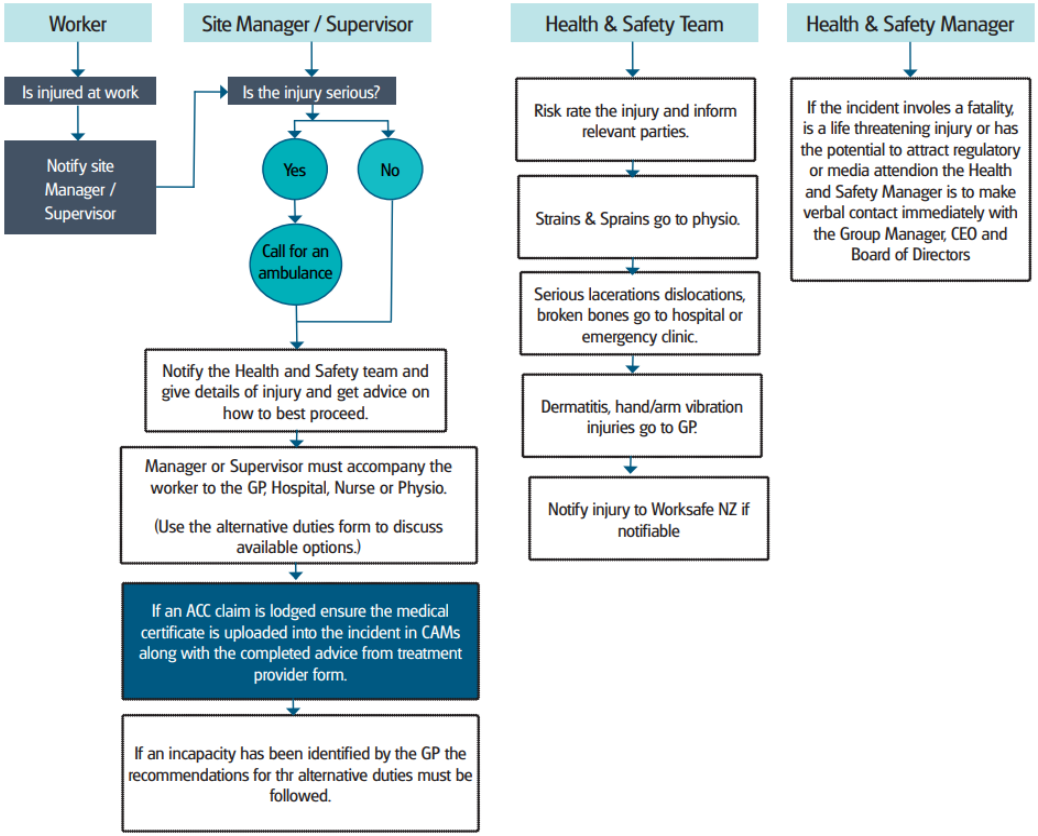
As part of the NMT's role of being a great place to work it is our responsibility to assist our employees with their return to pre-injury function when they have a non-work injury.



16.2 Fulton Hogan ACC Claims Flow Chart



16.3 Wellington Water ACC Claims Flow Chart



16.4 Non-Work Injury/ill Health

This involves co-operating with ACC and/or Gallagher Bassett (Fulton Hogan Employees) to develop rehabilitation that is effective and meaningful to the employee. This is also, of course, beneficial for the Network Maintenance Team as it means our employee will be back being productive within the team sooner.

When one of our employees suffers ill-health, we will work with the medical profession/ACC and assign alternative duties.

16.5 Alternative duties

When our people are in the process of returning to their pre-injury role it is imperative that we provide safe alternative duties for them where we can.

There is clear evidence that the sooner a person returns to work the sooner they will be able to do what they were employed for, and the better for the employee and employer.

The alternative duties should be meaningful but not outside the terms of the medical certificate.

17. Monitoring

17.1 Site Inspections/Audits

	Tool	Purpose	Frequency & Minimum Requirement	Total	Responsible for Delivery	Recorded in
Internal Audits	**HSQSE Site Inspection**	A risk-based check that we're doing what we say we are. It covers risk management, quality and environmental	2 per large depot per annum	6	Head Of Service Delivery And Network Maintenance	**Safety Culture** 1. Non-compliance, correct at the time no further action 2. If cannot correct, then place in CAMs as action 3. If LSRB – raise CAMs
			1 per SWDC per annum	1	Head Of Service Delivery And Network Maintenance	
			Support above		Health and Safety	
	Subbie Inspection Tool (per subbie)	A specific check to ensure the subbies we engage are meeting our minimum requirements	1 per contractor per annum	-	Contractor Lead	**Safety Culture** 1. Non-compliance, correct at the time no further action 2. If cannot correct, then place in CAMs as action 3. If LSRB – raise CAMs
			Support above		Health and Safety	
	TTM Site Inspection	A specific check to ensure that our TTM setups are meeting minimum requirements	4 per month	48	Subject Matter Expert Use Fulton Hogan / Wellington Water expertise	**Paper based** Copy to CAMs
			Support above		Health and Safety	**TO BE PUT INTO SAFETY CULTURE IF POSSIBLE**
	Critical Risk Conversation	Face to face safety conversation on site with contractor & employees undertaking critical risk activities	2 per person per month (employees 1, contractor 1)	72	Manager Service Delivery And Maintenance (3)	**Safety Culture** 1. Non-compliance, correct at the time no further action 2. If cannot correct, then place in CAMs as action 3. If LSRB – raise CAMs
				288	Delivery Team Leader (12)	
			2 per person per month	48	Alliance Director Head Of Service Delivery And Network Maintenance	
			2 per person per month	72	Health and Safety (3)	
	Safety Improvement	Defined as a proactive idea or action to improve safety, save money/time/effort	# of Alliance employees / 12 per month	-	Head Of Service Delivery And Network Maintenance	**CAMs** (See It/Report It)
	Site Health and Safety Quarterly Inspection	All WWL Depots to be safety and security inspected	1 per quarter per large depot	12	Manager Service Delivery And Maintenance (3)	**Paper based** Copy to CAMs

18. Review

18.1 Health & Safety Performance

Performance of the Network Maintenance Team will be measured monthly and reported to AMT.

18.2 Health & Safety System Reviews

The H&S system will be reviewed as part of the ongoing strategy reviews in order to ensure the system is delivering a healthy and safe workplace for all workers. Reviews will also be used to identify opportunities for continual improvement.

18.3 Document Retention

	What we need to keep?	Where is it kept?	How long is it kept?
1.	Risk Control Plan & other related documents including: • Risk Register • Permits • Plant Prestarts • Plant Induction Records	Contract File	12 months
2.	Audits & Inspections	CAMs	5 years
3.	Health Monitoring Results	Securely kept	30 years unless otherwise specified e.g. hearing, lung-function 40 years for asbestos-related disease monitoring 30 years after employment, or until the worker reaches age 75, (Whichever is longer) for radiation exposure e.g. NDM
4.	Workplace health monitoring results e.g. noise survey	Contract File	As per contract requirements or until superseded
5.	Training Records	PDP	Duration of employment
6.	ACC Records (for Fulton Hogan workers)	AEP Team	Indefinitely
7.	Calibration Records	G Drive	Last 3 tests, unless otherwise stipulated

19. Governance

19.1 Policies

Wellington Water and Fulton Hogan Health and Safety Policies are important and will remain active within the Network Maintenance Team. We are committed to world class health and safety that ensures our people are safe and healthy. The following policies set out both company's requirements and commitment to health and safety.

Living Safely Policy

Fulton Hogan Group Policy June 2024

People at the heart of everything

Our all-encompassing objective is to prevent life changing harm. Living Safely is a mindset. A way of working that prioritises our collective health, safety, and wellbeing. All day, every day. It's fostering an environment where our operational leaders lead, our systems enable, our people are empowered to make good decisions, and we hold each other accountable. We live safely so that we, and others in the communities in which we live and work, can get the most out of life.

We will:

- Demonstrate our commitment through active and visible operationally led health and safety leadership
- Strive for a simple and intuitive health and safety system that promotes high levels of ownership by every individual
- Understand and control our critical risks and respect and follow our Life Saving Rules
- Incorporate health and safety into the way we design, plan and do our work
- Work collaboratively with stakeholders, employees, subcontractors and industry to meet our legislative requirements and continually improve our health and safety performance
- Strengthen our health and safety skills and behaviours through training and development
- Promote a culture of reporting, investigation, learning and applied improvements
- Empower our people to act when action is required to maintain a safe workplace
- Measure our performance to identify risks and opportunities and set measurable objectives and targets to enable continual improvement
- Require this same standard of health and safety performance from our subcontractors

C W Bruyn
Managing Director

Fulton Hogan

good work

Health and Safety Policy

Our Purpose

Creating excellence in regional water services for healthy communities

Our Vision

Our people, suppliers and affected parties go home healthy and safe

Our Beliefs

- Health and safety is our top priority
- We look after ourselves; everyone takes personal responsibility for their own health and safety
- We look out for each other, suppliers and the public; we make sure everyone is safe
- Wellington Water takes a methodical approach to health and safety; we continuously review our systems to ensure they are up-to-date and ensure that health and safety is foremost in infrastructure planning and design
- We're committed to health and safety at all times; nobody walks past an unsafe activity or work site - we make it safe

Our Focus

- Safety: We identify and manage our most critical risks, and improve areas in which harm occurs
- Performance: We measure our performance to help us to continually learn and improve
- Capability: We support our people to have the skills and competencies to work safely
- Wellbeing: We support our worker's mental, physical, and social wellbeing

Our Commitments

Leadership

- We make sure our people work in a safe environment
- We make sure our work sites are safe for suppliers, neighbours and the general public
- We empower our people to manage health and safety in all situations and demonstrate their right to stop work, or refuse to carry out work, if they believe that doing the work would expose them, or anyone else, to a serious risk to health or safety from an immediate or imminent hazard.
- We proactively identify and manage hazards and ensure safe behaviour
- We support the safe and early return to work of any of our people who are injured or sick, and support and follow up on anyone who is injured on a Wellington Water site
- We will not discriminate or take negative steps against a worker because of their involvement in work health and safety

1. We recognise staff and suppliers who practice excellence in health and safety

Systems

2. We make sure our people have the training, skills and resources to work safely
3. We ensure infrastructure managed by Wellington Water is designed, constructed, operated and maintained safely, and will remain safe for our people, suppliers and the community

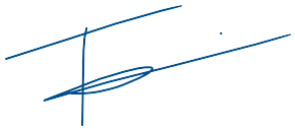
- We accurately record, investigate and report incidents and learn from them
- We monitor our health and safety performance and that of our suppliers as a basis for continuous improvement and identifying new and safer ways of working

Working with others

- Our suppliers are required to commit to our vision of our people and suppliers going home healthy and safe
- We make sure all suppliers working on behalf of Wellington Water have high quality health and safety systems in place
- We comply with and exceed all relevant legislation, regulations, codes of practice and industry standards
- We interpret health and safety broadly and work with all stakeholders to achieve our health and safety vision

TONIA HASKELL
CHIEF EXECUTIVE

Reviewed October 2023



19.2 Strategic Plan

Our combined strategic objectives for health and safety are currently:

1.	Leadership	Proactive, visible, health and safety leadership at every level. Authentic leaders who set high standards, inspire their teams and deliver continually improving levels of health and safety performance.
2.	Risk Management	Effective risk management. Critical risks identified, prioritised and controlled. Embedded learning from our 'high potential' events. Controls that separate people from risk.
3.	Living Safely	Building our Living Safely philosophies and principles into everything. Putting people back at the heart of our health and safety thinking, systems & initiatives.

19.3 Performance Measurement

The following measures shall be used to monitor health and safety performance and motivate ongoing improvements.

Measure	Target	Explanation
Lead Indicators		
Critical Risk Conversations	CRC > 90%	Leaders required to complete at least 90% of their monthly and annual CRC target.
Safety Improvements	12 per month	Safety improvements submitted by any employee
Certified Safe	Certified Safe > 95%	The percentage of the fleet that is required to be certified and has a current certified safe certificate.
High and Extreme actions closeout	H and E actions closed on Time > 90%	Percentage of actions identified during the investigation of our high and extreme risk rated events that were closed out on time.
Subbie Verification	> 90%	Contract, Induction and audit in last 12 months. All subbies that invoice NMT, that have not been verified in last 12 months.
Subbie Audits	≥ 100%	Operational managers must complete at least 4 per person, per annum. Down 2%
HSQES Inspection	> 90%	Percentage of operational departments who have completed two or more inspections in the last year. Target 10 per annum, 23 completed YTD
Measure	**Target**	**Explanation**
Lead Indicators		
Severity ()	Severity (rolling 12 months) < 10	Total days lost for high or extreme rated LTI's that have resulted in three or more days off work per million hours worked. Notes: Fatal accidents will be included as 250 days
TRIFR	TRIFR (rolling 12 months) < 5	Number of fatalities, lost time injuries and medical treatment injuries per 1,000,000 hours worked.
All operational staff have H&S training plans in place	All operational staff have H&S training plans in place within one week of starting, all mandatory training to be completed within 30 days and all other training to be completed within 90 days.	It is important our people are trained and competent.

19.4 NMT Incident, Injury and Treatment Definitions

To ensure consistency across the NMT the following definitions apply:

1.	Near miss	An unplanned event that did not result in injury, illness, property or environmental damage, rework, or a non-conformance of any kind – but had the potential to do so.
2.	Notifiable event	An incident that is required to be notified to an authority by relevant legislation.
3.	Occupational health	An assessment by a qualified health professional that does not result in any treatment.
4.	Occupational Illness	Any work-related illness other than one resulting from a work injury that was caused by (or mainly caused by) exposures at work. The basic difference between an injury and illness is the single event concept. If the event was caused in one instant, it is an injury. If it resulted from prolonged or multiple exposures to a hazardous substance or environmental factor, it is an illness. For the purpose of clarification, gradual process injuries are considered an illness.
5.	Work injury	Damage to a worker's body caused by a single acute event at work. Aggravation of a pre-existing or underlying injury or condition shall not constitute a recordable work injury.
6.	Non-work injury	Damage to a worker's body that occurred outside of work. We should, as far as possible, help the individual to remain at work by accommodating their condition, and the damage/injury would not normally need to be recorded in CAMs.
7.	Safety Improvement	A proactive idea or action to improve safety that could prevent a potential near miss, injury or damage. This could be a new initiative or fixing an observed unsafe condition. A near miss is an event that has already occurred. A safety improvement is something that could create a safer workplace.
8.	No treatment incident (NTI)	Any work-related injury where there is no first aid or medical treatment required but it is felt that the incident should be recorded in CAMs for future reference should the injury worsen.
9.	Proactive intervention (PI)	Discretionary treatment provided by the company that has resulted from something either at work or out of work and is provided with the intention of preventing the development of an injury or illness. Examples include physiotherapy and counselling.
10.	First aid injury (FAI)	Treatment for a work-related injury that required the skills of: Trained first aider, (or) Could have been provided by a trained first aider but was instead provided by a medical practitioner without the need for any additional medical treatment.
11.	Medical treatment injury (MTI)	A work-related medical treatment Injury is one that occurs at work and requires the skills of a qualified medical professional. The Australian Federal Safety Commission (FSC) definition includes the following treatments: Treatment of partial or full thickness burns Insertion of sutures (but not the application of butterfly dressings, surgical glue or steri-strips which are first aid) Removal of foreign bodies embedded in eye Removal of foreign bodies from a wound if the procedure is complicated by how deeply it/they may be embedded and the location Surgical debridement (Medical procedure to clean skin) Admission to a hospital for treatment or observation Any work injury that results in loss of consciousness Treatment of infection Use of prescription medications (except a single dose administered on the first visit for minor injury or discomfort) The following, on their own, would not normally be considered medical treatments: Administration of tetanus shot/s or booster/s Diagnostic procedures such as X-rays or laboratory analysis unless they lead to further treatment Review of an injury by a medical practitioner, as a proactive measure following first aid treatment, unless the injury actually requires medical treatment Physiotherapy or treatment from a chiropractor or osteopath
12.	Lost time injury (LTI)	Any workplace injury, (supported by a medical certificate) that results in a worker losing one full shift of work or more. Please note the following: The loss of two consecutive part shifts does not constitute a lost time injury Lost days should be recorded based on a five day working week (for example, three weeks equates to 15 lost days) Allergic reactions are considered pre-existing medical conditions and do not become LTIs. (For example, an allergic reaction to an insect bite or bee sting) If there is any doubt that an injury occurred in the workplace, evidence (such as a medical certificate) must be requested. Occupational illnesses (as defined below) that result in the loss of at least one full shift at work will be counted as lost time injuries
13.	Severe injury	A severe injury is any lost time injury that requires three or more days off work and is rated as high or extreme in the risk matrix.

20. Appendices

20.1 Accountabilities

ALLIANCE MANAGEMENT TEAM

- Establishment, implementation, maintenance, and improvement of the system
- Approving and signing all policy statements
- Approving the company health and safety objectives and targets
- Ensuring that adequate and competent resources are available to effectively implement the health and safety system
- Creating and driving a health and safety culture that will meet the company's safety objectives and values
- Completing and logging Critical Risk Conversations in line with agreed targets
- Ensuring the Company maintains all necessary safety accreditations

ALLIANCE DIRECTOR

- Providing resources so that the health and safety system can be effectively implemented
- Driving the company safety culture in their operations
- Implementing the company health and safety system into their operations
- Monitoring and reporting on the health and safety system and performance within their group, and recommendations for improvement
- Assisting and advising on any issues or non-conformances that cannot be resolved with a subcontractor, or any instances which involve actual or potentially high-risk non-conformances
- Completing and logging Critical Risk Conversations in line with agreed targets
- Ensuring the strategic plans, objectives and targets are cascaded down through the business and included in all local versions of the relevant plans (e.g. regional strategic plans, project/site safety plan, project/site quality plan)

HEAD OF SERVICE DELIVERY AND NETWORK MAINTENANCE
MANAGER SERVICE DELIVERY AND MAINTENANCE
TEAM LEADER

- Driving the company safety culture in their operations, with a focus on personal visible leadership
- Providing adequate resources to enable the effective management of health and safety in their areas of operations
- Ensuring a safety plan within their areas of operations is in place
- Monitoring of subcontractor activities appropriate to the health and safety risk, confirming, compliance with contractual health and safety and legal obligations, and that on-going consultation, communication and co-ordination of activities continues to be robust
- Ensuring the strategic plans, objectives and targets are cascaded down through the business
- Completing and logging Critical Risk Conversations, Subbie audits, TTM audits, and HSQSE Inspections in line with agreed targets

ALLIANCE HEALTH AND SAFETY MANAGER
HEALTH AND SAFETY TRAINER AND ASSURANCE ADVISOR
HEALTH AND SAFETY ADVISOR

- Reporting incidents, conducting incident investigations, and ensuring corrective actions are closed out, communicated, and implemented
- Ensuring appropriate injury management and rehabilitation of injured workers
- Assisting in the development of the company health and safety policy
- Ensuring the health and safety system is of an appropriate standard, and effectively implemented, so that the health and safety of our workers and the public, with all necessary safety accreditations, are maintained
- The development of draft strategic plans, objectives and targets and issuing the draft plans to the executive management team/board for approval
- Develop an annual audit programme, ensuring it is implemented and results reported
- Assisting in developing and driving the company health and safety culture
- Compiling the monthly safety report and comment on trends, significant incidents, and regulatory actions
- Representing the business at appropriate industry forums
- Sourcing and delivering health and safety training programs as required
- Being a health and safety coaching/advice resource for operations
- Ensuring incident investigations occur, corrective actions are implemented, and being involved in investigations as required
- Implement an audit and review program against the overarching management system/plan
- Completing and logging Critical Risk Conversations, Subbie audits, TTM audits, and HSQSE Inspections in line with agreed targets

WORKER

- Take reasonable care for your own personal health and safety
- Take reasonable care that your actions, or lack of action, do not adversely affect the health and safety of other persons
- Comply, as far as reasonably possible, with any reasonable instruction that is given by our business to allow our business to comply with the Health and Safety at Work Act 2015 (New Zealand) or other relevant regulations
- To stop work, or stop another from working, if they feel the work is unsafe

21. Changes

Version	Release Date	Changes
V 2.4	29th August 2024	► General update of photos and grammatical errors ► Added 'Alliance Director' role ► Updated PPE section – Yellow hi-vis ► Added Just Culture decision tree ► Significant Safe Risks reviewed by: • Confined Space – *Ray Ritchie* • Mobile Plant – *Jon Manava* • High Pressure – *Jon Manava* • Digging / Excavation – *Alistair Forsyth, Jon Manava* • Metallic Pipes - *Alistair Forsyth, Jon Manava* • Working Around Services - *Alistair Forsyth, Jon Manava* • Lifting & Suspended Loads – *Blair Dynan* • Hazardous Substances – *Blair Dynan* ► Added Significant Environmental Risks section. Reviewed by: • *Simon Angus, Ray Ritchie* ► Added Site Inspection/Audit table ► Removed Leadership Safety Actions (LSA) and replaced with Critical Risk Conversations (CRC)
V 2.5	10th February 2025	► General update of photos and grammatical errors ► Replaced 'COG' and 'Customer Operations Group' with 'NMT' and 'Network Maintenance Team' ► Updated Living Safely Policy ► Changed 'Alliance Leadership Team' to 'Alliance Management Team' ► Updated Performance Measurement section - Added: • Subbie Verification • Subbie Audits • HSQES Inspections ► Updated Accountabilities section – Removed roles: • Head of Network Operations and Engineering • Network Operations and Engineering Lead • Operations Engineer • Technical Advisor • Health and Safety Lead - Added roles: • Alliance Health and Safety Manager • Health and Safety Trainer and Assurance Advisor

People First, Every Time

Wellington Water

Fulton Hogan

Version 2.5 | 10-02-2025