

# Living Safely Manual

People First, Every Time

Customer  
Operations Group



Water Ways

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for more info  
and video

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# 1. Introduction

## 1.1 Purpose

Kia ora whānau

The main role of the Customer Operations Group is to maintain and operate the drinking water, waste water 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 everyday 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 minimise 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 Customer Operations Group. 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.

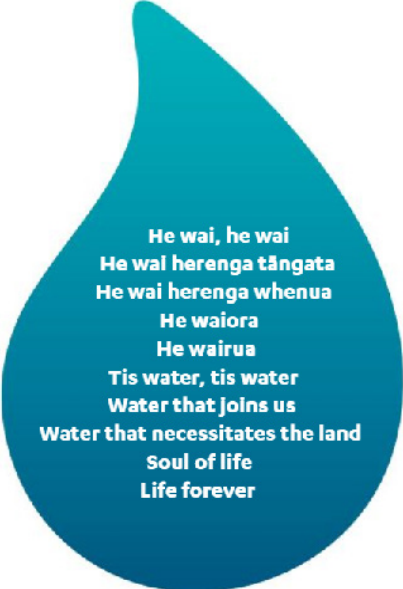
We know good health and safety is underpinned by an engaged workforce, supportive leaders, and robust risk management practices. You – our people - are our most important asset and we need your help and support to ensure our workplace is a safe place to work so that everyone gets to go home safe and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

Ngā Mihi,

Kevin Locke, Group Manager Customer Operations Group



**He wai, he wai  
He wai herenga tāngata  
He wai herenga whenua  
He waiora  
He wairua  
Tis water, tis water  
Water that joins us  
Water that necessitates the land  
Soul of life  
Life forever**

## 2. Governance

### 2.1 Policies

Fulton Hogan and Wellington Water's Health and Safety Policies are important, and will remain active within the Customer Operations Group. 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.



## 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

COLIN CRAMPTON

CHIEF EXECUTIVE  
Reviewed July 2019

### 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 to stop unsafe acts as they happen; we make sure there's a safe working environment before work continues
- 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 recognise staff and suppliers who practice excellence in health and safety

#### Sytems

- We make sure our people have the training, skills and resources to work safely
- 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



## Living Safely Policy

### People at the heart of everything we do

Living safely is how we go about every aspect of our lives; all day, every day. It is more than work, it is about integrating our work, home and interests, our desire to get the best out of life, and to be the best we can. It is recognising our strengths and weaknesses, and making positive choices that benefit our wellbeing and way of life, including those of others in the communities in which we live and work.

### We will:

- Demonstrate our commitment through active and visible leadership
- Abide by a simple safety management system that encourages health and safety ownership by each and every individual
- Incorporate health and safety into the way we design, plan and do our work
- Work collaboratively with our subcontractors to meet the required health and safety standards
- Enhance our health and safety skills and behaviours through training and development
- Foster a culture of reporting, learning and sharing
- Be empowered to maintain a safe and healthy workplace

C W Bruyn  
Managing Director

good  
work

Fulton Hogan



## 2.2 Strategic Plan

Our combined strategic objectives for health and safety are currently:

|    |                 |  |
|----|-----------------|--|
| 1. | Leadership      | <ul style="list-style-type: none"> <li>Proactive, visible, health and safety leadership at every level.</li> <li>Authentic leaders who set high standards, inspire their teams and deliver continually improving levels of health and safety performance.</li> </ul> |
| 2. | Risk Management | <ul style="list-style-type: none"> <li>Effective risk management.</li> <li>Critical risks identified, prioritised and controlled.</li> <li>Embedded learning from our 'high potential' events.</li> <li>Controls that separate people from risk.</li> </ul>          |
| 3. | Living Safely   | <ul style="list-style-type: none"> <li>Building our Living Safely philosophies and principles into everything.</li> <li>Putting people back at the heart of our health and safety thinking, systems &amp; initiatives.</li> </ul>                                    |

## 2.3 Performance Measurement

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

| Measure  | Target  | Explanation  |
|--|---|--|
| Lead Indicators  |   |  |
| Leadership safety actions  | LSA > 90%   | Operational managers required to complete at least 90% of their monthly and annual LSA target.   |
| Safety improvements  | Safety improvements / Employee12 > 1  | Safety improvements submitted per employee with the target line set initially at one new idea per employee annually.                     |
| Certified safe   | Certified Safe > 95%  | The percentage of the fleet that is required to be certified and has a current certified safe certificate.                               |
| HandE 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.        |
| All team leaders and service delivery managers review their team and contractors RCP's and permits regularly | At least 3 RCP's checked and documented per week.<br>=>90% Permits reviewed | Our leaders need to have oversight of the work undertaken, and our crews and contractors need to manage risk using the systems in place. |

| Measure  | Target   | Explanation   |
|--|--|---|
| Lag Indicators   |  |   |
| Severity   | Severity12 < 30 (HandE LTI's ≥ 3 days) / 1,000,000 hours worked.   | Total days lost for high or extreme rated LTI's that have resulted in three or more days off work per million hours worked.<br>Notes:<br>• Fatal accidents will be included as 250 days |
| TRIFR  | TRIFR12 ≤ 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.   |



## 2.4 Group Incident, Injury and Treatment Definitions

To ensure consistency across the Group 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. | 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.   |
| 5. | 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.  |
| 6. | No treatment incident          | 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.   |
| 7. | Proactive intervention         | 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.   |
| 8. | First aid injury (FAI)         | Treatment for a work-related injury that required the skills of: <ul style="list-style-type: none"> <li>• Trained first aider, (or)</li> <li>• 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.</li> </ul>  |
| 9. | 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.<br>The Australian Federal Safety Commission (FSC) definition includes the following treatments: <ul style="list-style-type: none"> <li>• Treatment of partial or full thickness burns</li> <li>• Insertion of sutures (but not the application of butterfly dressings, surgical glue or steri-strips which are first aid)</li> <li>• Removal of foreign bodies embedded in eye</li> <li>• Removal of foreign bodies from a wound if the procedure is complicated by how deeply it/they may be embedded and the location</li> <li>• Surgical debridement (Medical procedure to clean skin)</li> <li>• Admission to a hospital for treatment or observation</li> <li>• Any work injury that results in loss of consciousness</li> <li>• Treatment of infection</li> <li>• Use of prescription medications (except a single dose administered on the first visit for minor injury or discomfort)</li> </ul> The following, on their own, would not normally be considered medical treatments: <ul style="list-style-type: none"> <li>• Administration of tetanus shot/s or booster/s</li> <li>• Diagnostic procedures such as X-rays or laboratory analysis unless they lead to further treatment</li> <li>• Review of an injury by a medical practitioner, as a proactive measure following first aid treatment, unless the injury actually requires medical treatment</li> <li>• Physiotherapy or treatment from a chiropractor or osteopath</li> </ul> |

|     |                        |   |
|-----|------------------------|---|
| 10. | 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.<br>Please note the following: <ul style="list-style-type: none"> <li>• The loss of two consecutive part shifts does not constitute a lost time injury</li> <li>• Lost days should be recorded based on a five day working week (for example, three weeks equates to 15 lost days)</li> <li>• 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)</li> <li>• If there is any doubt that an injury occurred in the workplace, evidence (such as a medical certificate) must be requested.</li> <li>• 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</li> </ul> |
| 11. | Safety Improvement     | A proactive idea or action to improve safety that could prevent a potential near miss, injury or damage.<br>This could be a new initiative, or fixing an observed unsafe condition.<br>A near miss is an event that has already occurred. A safety improvement is something that could create a safer workplace.  |
| 12. | 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.   |
| 13. | 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.<br>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.  |

### INJURY RECLASSIFICATION

Where there is disagreement with an injury classification eg MTI, LTI they can apply for it to be reviewed using the [Injury Reclassification Request template \(completed by the SDM and the Health and Safety Team\)](#).

Reclassification will be considered in line with ACC principles for cover decisions. Late reporting, failing to manage an injury or other employment issues are NOT reasons to reclassify. Injuries sustained in a road traffic accident (covered by ACC's motor vehicle fund) and where we have absolutely confirmed that it was a "no-fault" event, will be considered as non-work.

## 3. 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.



### 3.1 Pre-employment, Induction, Training and Competence

#### 3.1.1 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.

#### 3.1.2 INDUCTION

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

#### 3.1.3 TRAINING

The training needs of employees should be addressed at employment and then through annual performance reviews. Training needs are recorded and managed by the Customer Operations Group.

| 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   | <ul style="list-style-type: none"> <li>• As part of foundational leadership training.w</li> <li>• Five year refresher</li> </ul> |
| Living Safely: Managing Safety and above Safety responsibilities and how to deliver on those | Team Leaders       | <ul style="list-style-type: none"> <li>• Within first 12 months of becoming a manager.</li> <li>• Five year refresher</li> </ul> |

#### 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 / maintains a concrete saw  | <ul style="list-style-type: none"> <li>• Prior to use</li> </ul>   |
| Chainsaw  | Anyone who operates / maintains a chainsaw  | <ul style="list-style-type: none"> <li>• Prior to use</li> </ul>   |
| Confined space and gas including unit standard for water reticulation | <ul style="list-style-type: none"> <li>• Anyone who enters a confined space</li> <li>• Standby person for confined space entry</li> <li>• Anyone issuing a confined space permit</li> </ul> | <ul style="list-style-type: none"> <li>• Before doing any confined space work</li> </ul>                           |
| Fall arrest systems   | Anyone working at height using fall arrest systems  | <ul style="list-style-type: none"> <li>• Before doing work at height</li> </ul>                                    |
| First move baseline   | Recommended for all staff   | <ul style="list-style-type: none"> <li>• No expiry</li> </ul>  |
| Health & Safety Rep training  | Elected health and safety representatives   | <ul style="list-style-type: none"> <li>• As soon as possible after election</li> </ul>                             |
| Lock out tag out  | All staff performing isolation on equipment (beyond tagging out faulty equipment)   | <ul style="list-style-type: none"> <li>• Prior to completing an isolation</li> <li>• Two-year refresher</li> </ul> |

## COMPETENT TO OPERATE (CTO) – HEAVY MOVING PLANT

The CTO program is a set of specific competencies mandated for the operators of certain mobile plant. Refer to the [Competency to Operate \(CTO\) NZ guidelines](#) for details. 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 Customer Operations Group:

- ▶ Excavators
- ▶ Crane
- ▶ Truck (Class 2 and above)\*

Assessments are also available for gantry crane for business units that require them.

## 3.2 PPE and Clothing

The Customer Operation Group's personal protective equipment (PPE) and clothing requirements are outlined in this section of the manual. They apply to all people working on our sites (refer also to the [Living Safely Clothing Catalogue](#)).



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

### 3.2.1 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.

Refer to sections 15 - 20 of the Health and Safety at Work (General Risk and Workplace Management Regulations)

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 SQTE 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, eg how to check ear muff 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.

### 3.2.2 MANDATORY PPE – REQUIRED ON ALL OPERATIONAL YARDS AND WORKSITES



#### Steel or composite capped boots.

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



#### High visibility

Day-glo safety vests, shirts or overalls (to be worn done up).

### 3.2.3 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 shirts and long pants

are required to be worn by all workers on operational sites as a default position. A risk assessment can be undertaken to wear short sleeves (not shorts) if other controls are put in place. This risk assessment must be documented. See the PPE policy for more detail (QR code to the left of this page).



#### Hardhats

are required to be worn by all workers on the site if:

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

### 3.2.4 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.



### 3.2.5 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



Water Ways  
CHAINSAWS



#### 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 controls measures in place eg on-tool extraction or water suppression)



Water Ways  
CONCRETE  
SAWS



#### Using an angle grinder

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



Water Ways  
GRINDERS



#### 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



Water Ways  
ASBESTOS  
CEMENT PIPES

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

## Get your **gears** on

New **PPE** and **clothing** options available, wear the correct gear for the job

### Minimum Site PPE

| Icon | Description  |
|------|--|
|      | Steel or composite capped lace up boots are mandatory on all work-sites (steel capped gumboots in wet conditions)  |
|      | Dry glo vests, shirts or overalls are mandatory on all work-sites (worn done up)                                   |
|      | Worn on all work-sites unless doing so reduces visibility & increases risk (e.g. worn in the rain)                 |
|      | When it's client requirement, if lifting machinery is on site & when something could fall on you or you could fall |
|      | Used when you need to raise your voice to be heard by someone 1m away  |
|      | For manual handling tasks and handling hazardous materials (not to be worn where there is a risk of entanglement)  |

If the site or task requires a higher PPE standard, it must be followed.

**Fulton Hogan** **Living Safely**

### 3.3 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                | <ul style="list-style-type: none"> <li>Raise and address any safety concerns from the previous shift</li> <li>Inform personnel of any areas posing a significant risk for the coming shift</li> <li>Provide a forum to raise health and safety issues</li> <li>Discuss daily site activities and document them on the RCP</li> <li>Coordinate works and risk management</li> </ul>   | Line managers<br>Subcontractors<br>Employees |
| Opportunities for Improvement (OFI's) Paper or MyVoice              | <ul style="list-style-type: none"> <li>Individuals submit OFI's for incidents, risks or improvements</li> <li>Health and safety risks can be investigated and managed</li> </ul>   | All workers                                  |
| Toolbox / Tailgate meetings<br>Recommend weekly;<br>minimum monthly | <ul style="list-style-type: none"> <li>Topics to be determined by manager/supervisor/department/project/workers</li> <li>Two way discussion</li> </ul>   | All workers                                  |
| Leadership Safety Actions   | <ul style="list-style-type: none"> <li>Informal and regular health and safety communication between site workers and supervisors / management</li> <li>Positive reinforcement or constructive feedback</li> <li>Site based</li> </ul>  | All workers                                  |
| Health and Safety Representatives (HSR's)                           | <ul style="list-style-type: none"> <li>Represent workers in their work group in relation to health and safety</li> <li>Share information / concerns from employees and other workers with managers and the safety committee</li> <li>Provide feedback from safety committee meetings to the area</li> <li>Assist with the development, roll out and use of health and safety risk controls and programmes / initiatives</li> </ul> | Accessible to all in their work areas        |
| Health and safety committees  | <ul style="list-style-type: none"> <li>Discuss general and raised health and safety issues and agree on relevant actions</li> <li>Identify and assist in the development and implementation of health and safety risk controls, safety improvements and corrective actions</li> <li>A conduit for safety information</li> </ul>  | All workers                                  |

|  |  |  |
|--|--|--|
| Worker recognition   | <ul style="list-style-type: none"> <li>Recognition for individual and team contributions to health and safety, e.g. quarterly health and safety awards, congratulation posters displayed on noticeboards and in toolbox / tailgate talks, on-site events such as morning teas / barbeques</li> </ul> | Supervisors<br>Subcontractors<br>Consultants<br>Suppliers<br>Employees |
| Health and safety noticeboard                                      | <ul style="list-style-type: none"> <li>Updates of health and safety information e.g. toolbox/tailgate minutes, health and safety consultation committee minutes, hazard alerts, lessons learned</li> </ul>   | Accessible to all  |
| Consult, co-operate and co-ordinate with PCBU's with shared duties | Include: <ul style="list-style-type: none"> <li>Neighbours of fixed sites</li> <li>Employers of other workers on the same site</li> <li>PCBUs with shared access ways</li> </ul>   | Workers from all relevant work groups                                  |

### 3.4 Responsibilities

Refer also to Appendix 1: Accountabilities

| Role  | Responsibilities   |
|---|--|
| Team Leader   | <ul style="list-style-type: none"> <li>General understanding of the manual and its content</li> <li>Responsible for making sure that the requirements are followed on their jobs</li> </ul>  |
| Service Delivery Manager, Manager Customer Delivery | <ul style="list-style-type: none"> <li>Detailed understanding of the manual and its content</li> <li>Responsible for making sure that the requirements are followed on their projects and within their divisions</li> <li>Corrective action where necessary</li> </ul>   |
| Group Manager Customer Operations Group             | <ul style="list-style-type: none"> <li>General understanding of the manual and its content</li> <li>Responsible for making sure that the requirements are followed systematically on their projects and within their Regions</li> <li>Corrective action where necessary to improve disciplined use</li> <li>General understanding and compliance monitoring through zone health and safety managers</li> </ul> |
| Alliance Leadership Team                            | <ul style="list-style-type: none"> <li>Ultimate (chain of command) responsibility for content and compliance</li> </ul>  |

## 3.5 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.

### 3.5.1 FATIGUE

Fatigue may be caused by work or from home life. The Customer Operations Group 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 14 hours on duty in a 24-hour period, this includes drive time and breaks. including driving to and from home, and the two mandatory half hour breaks). NB this can only be exceeded in emergency situations (refer definitions) 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
- ▶ 10 hour break is required every 24-hour period (9 hour break for Wellington Water staff - working towards alignment with Unions)
- ▶ No more than 70 hours worked in a week (stand down hours are excluded from these numbers)
- ▶ 24 hour break is required after seven consecutive days worked (refer to the Collective Agreement for specific details)
- ▶ Half an hour break required after every 5.5 hours continuous active work (driving and non-driving)

*Refer to the Fatigue Management – Minimum Standard - NZ*

### 3.5.2 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.

Where there is a risk to health and safety, we will endeavour to provide alternate duties to enable employees to remain at work.



### 3.5.3 DRUGS AND ALCOHOL

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

The use of illegal 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 alcohol and drugs 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 employer's alcohol and drug policy. This includes; pre-employment, random, post incident and reasonable cause testing. It allows for both urine and oral fluid (swab) testing.

*Refer: Drug and Alcohol Standard - NZ*

### 3.5.4 STRESS AND MENTAL ILL-HEALTH

Where a worker is identified as, or shows signs of suffering from stress or mental health concerns it 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.

### 3.5.5 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 Fulton Hogan or Wellington Water

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

### 3.5.6 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.

## 3.6 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. Health monitoring records must be kept for:

- ▶ 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

They must be stored confidentially in line with privacy requirements.

### 3.6.1 MANDATORY REQUIREMENTS

The 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.

| 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 <ul style="list-style-type: none"> <li>• ACC claim lodgement</li> <li>• WorkSafe notification may be required</li> </ul> Other hearing loss patterns – refer to GP.   |
| Vision checks (Snellen or Keystone) | All drivers and mobile plant operators<br>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   | <ul style="list-style-type: none"> <li>• Refer to GP.</li> </ul>   |
| Lung function                       | All workers exposed to dust (including wood, silica and other)<br>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 <ul style="list-style-type: none"> <li>• May require ACC claim lodgement</li> <li>• WorkSafe notification may be required</li> </ul> |
| Skin check                          | Workers exposed to: <ul style="list-style-type: none"> <li>• cement or concrete</li> <li>• diesel</li> <li>• other dermatitis causing chemicals</li> </ul> | Refer to safety manager for hygiene and PPE advice.<br>May require GP referral if sensitisation increases.   |

|                       |   |  |
|-----------------------|---|--|
| Blood tests           | Organophosphate exposure  | Refer to suitably qualified Occupational Health Nurse for testing <ul style="list-style-type: none"> <li>• May require ACC claim lodgement</li> <li>• WorkSafe notification may be required</li> </ul> |
| Fatigue questionnaire | All drivers and mobile plant operators<br>Anyone at risk on the fatigue risk assessment | Refer concerns to safety manager.<br>May require a referral to either a GP or a sleep specialist.  |
| Weight                | Machine Operators   | Weight over 125kg – refer to Safety Manager.<br>Weight over 150kg may require stand-down as outside of seat safe weight limit  |

### 3.6.2 OPTIONAL HEALTH 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: Health Monitoring Procedure - NZ*

### 3.6.3 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.

## 3.7 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.



## 4. 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:

- ▶ Fulton Hogan or Wellington Water-owned plant and equipment used in the Customer Operations Group
- ▶ 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

### 4.1 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.

(Refer to the [HowTo - Plant and Equipment NZ - Procurement and Suppliers](#) for specific reference information).

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 Service Delivery Manager.

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.

### 4.2 Our Fleet - Minimum Requirements

| Min. Requirements Fleet                | Cars & Utes | Caravans | Cranes | Trucks | Mobile Plant | Fixed Plant         | Vessels on Water |
|--|-------------|----------|--------|--------|--------------|---------------------|------------------|
| Legal Requirements                     |             |          |        |        |              |                     |                  |
| Registration                           | ✓           | ✓        | ✓      | ✓      | ✓            | If legally required |                  |
| RUCs                                   | If Diesel ✓ |          | ✓      | ✓      | ✓            | If legally required |                  |
| WOF                                    | ✓           | ✓        |        |        |              |                     |                  |
| COF                                    |             |          | ✓      | ✓      | ✓            |                     |                  |
| Current crane certification            |             |          | ✓      |        |              |                     |                  |
| Code compliance certificate            |             |          |        |        |              | ✓                   |                  |
| Building WOF                           |             |          |        |        |              | ✓                   |                  |
| Electrical WOF                         |             | ✓        |        |        |              | ✓                   |                  |
| Customer Operations Group Requirements |             |          |        |        |              |                     |                  |
| Serviced                               | ✓           | ✓        | ✓      | ✓      | ✓            | ✓                   | ✓                |
| Certified Safe*                        |             | ✓        | ✓      | ✓      | ✓            | ✓                   |                  |
| Vehicle pre-start check (daily)        |             | ✓        | ✓      | ✓      | ✓            | ✓                   | ✓                |

\*Certified Safe is Fulton Hogan's mobile plant safety assurance system. Its use and application is explained below.



### 4.3 Minimum Requirements - Our Fleet and 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* and an induction sticker attached.

| Minimum Requirements   | Trucks | Excavators | Cranes | Other Mobile Plant |
|--|--------|------------|--------|--------------------|
| <b>Legal Requirements (where legally required)</b>   |        |            |        |                    |
| Registration   | ✓      | ✓          | ✓      | ✓                  |
| RUCs   | ✓      | ✓          | ✓      | ✓                  |
| COF  | ✓      | ✓          | ✓      | ✓                  |
| Current crane certification  |        |            | ✓      |                    |
| <b>Customer Operations Group Requirements</b>  |        |            |        |                    |
| 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  |        | ✓          |        | Loaders            |
| Vehicle pre-start check (daily)  | ✓      | ✓          | ✓      | ✓                  |
| <b>Air compressors:</b> Must be fitted with securing straps or double-eye, stocking-style, whip-socks to prevent the hose / pipe from flailing if it de-couples  |        |            |        |                    |
| <b>Nissan truck models:</b> 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 |        |            |        |                    |
| <b>Suppliers:</b> 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.  |        |            |        |                    |
| <b>Trucks:</b> A truck is classed as a heavy vehicle requiring a COF. A heavy vehicle is a vehicle with a GVM greater than 3500kg.   |        |            |        |                    |

\*should meet an equivalent standard to that described in PAM90

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

# PLANT INDUCTION

20212223

7 REGISTRATION / PLANT No.

8

9

10 ISSUED BY:

11

12

1

2

3

4

5

6

23222120

**Water Ways**  
SUBCONTRACTED  
AND HIRED PLANT

Subcontracted and Hired in Plant Minimum Requirements Checklist - NZ

|                         |  |               |  |
|-------------------------|--|---------------|--|
| Plant Description:      |  | Inspected by: |  |
| Make & Model:           |  | Organisation: |  |
| Registration / Fleet #: |  | Date:         |  |
| Owned by:               |  |               |  |

| Minimum Standards   | Trucks   |        | Excavators |        | Cranes   |        | Other Mobile Plant |        |
|---|----------|--------|------------|--------|----------|--------|--------------------|--------|
|   | Required | Comply | Required   | Comply | Required | Comply | Required           | Comply |
| <b>Legal Requirements (where legally required)</b>        |          |        |            |        |          |        |                    |        |
| Registration  | ✓        |        | ✓          |        | ✓        |        | ✓                  |        |
| RUCs  | ✓        |        |            |        | ✓        |        |                    |        |
| COF   | ✓        |        |            |        |          |        | ✓                  |        |
| Current crane certification                               |          |        |            |        | ✓        |        |                    |        |
| <b>Fulton Hogan Requirements</b>                          |          |        |            |        |          |        |                    |        |
| Reversing alarm   | ✓        |        | ✓          |        | ✓        |        | ✓                  |        |
| Flashing light  | ✓        |        | ✓          |        | ✓        |        | ✓                  |        |
| Seatbelts fitted  | ✓        |        | ✓          |        | ✓        |        | ✓                  |        |
| Park brake alarm (audible externally)                     | ✓        |        |            |        |          |        |                    |        |
| Swinging tail door locked out                             | ✓        |        |            |        |          |        |                    |        |
| Antiburst valves fitted (all lifting equipment > 7 tonne) |          |        | ✓          |        | ✓        |        |                    |        |
| ROPs / FOPs / TOPs fitted                                 |          |        | ✓          |        |          |        | ✓                  |        |
| Two stage quick hitch (or pinned)                         |          |        | ✓          |        |          |        |                    |        |
| Certified lifting point                                   |          |        | ✓          |        |          |        | Loaders            |        |
| Vehicle prestart check (daily)                            | ✓        |        | ✓          |        | ✓        |        | ✓                  |        |
| <b>Project Specific Requirements</b>                      |          |        |            |        |          |        |                    |        |
|   |          |        |            |        |          |        |                    |        |
|   |          |        |            |        |          |        |                    |        |

**Air Compressors:** Must be fitted with securing straps or double-eye, stocking-style, whip-socks to prevent the hose / pipe from flailing if it uncouples.

**Nissan Truck Models:** CG380, CG400, CK330, CM180, CW330, CW380, CW400, manufactured between 1993 & 2005 are not permitted on Fulton Hogan sites unless these trucks have been fitted with a replacement, approved, aftermarket hand brake that complies with the Heavy Vehicle Brake Rule 32015.

Document ID: FHUB-1677224255-61601  
Version 2.0

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Published: 25/02/2020  
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## 4.4 Special Requirements and Rules

The following requirements and rules are in the process of being implemented into the Customer Operations Group:




| Item                           | Requirement   | Reason  |
|--------------------------------|---|---|
| Chain hoists                   | Elephant brand of chain hoists not permitted  | <i>Red Alert: 1711/02</i>   |
| 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.)<br>Apply safe parking practices (handbrake on, truck in gear, wheels pointing into the kerb when downhill and away from the kerb when uphill) | <i>Red Alert 20-001</i>   |
| 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 pinlok grab hooks  | <i>Red Alert: 1507/003</i>  |
| Load binders                   | Ratchet binders preferred, recoilless twitches permitted, lever type load binders banned  | <i>Red Alert: 1505/001</i>  |
| Waratah installation           | Purpose-built waratah rammers to be used  | <i>Red Alert: 1406/003</i>  |
| 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  | <i>Red Alert: 1405/002.2</i><br><i>Pneumatic Hose Restraint - Standard - NZ</i> |
| 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  | <i>Red Alert: 10/006</i>  |
| Electrical tagging and testing | Workshops / Construction sites - every six months<br>Manufacturing and contracting sites - annually<br>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  | <i>Red Alert REDNZ 19-006</i>   |

|                           |   |   |
|---------------------------|---|---|
| Swinging taildoors        | Eliminate swinging tail doors unless absolutely essential<br>Must have two locking mechanisms and a dashboard alarm<br>No truck with a GVM of 9T or less is permitted to have a two-way swinging taildoor that can swing to the side of the vehicle                     | <i>Red Alert RED:001</i><br><i>Swinging Tail door Standard</i>  |
| Excavator bucket security | Spare buckets must be secured during transport<br>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 | <i>Moving Plant Safety</i><br><i>Essential - Digger buckets</i> |





## 4.5 Restricted use tools

| Tool  | Use Restricted To   | Verification   |
|---|---|--|
| <br>Water Ways<br>CHAINSAWS        | Customer Operations Group employees: Those who have completed an approved the basic chainsaw operation course within last five years<br>Contractors: Those who have provided evidence to verify their competence                              | Skills view<br>Examples may include: training completed, relevant experience, referee endorsements |
| <br>Water Ways<br>CONCRETE<br>SAWS | Customer Operations Group employees: Those who have completed an approved the basic concrete saw operation course within last 5 years<br>Contractors: Those who have provided evidence to verify their competence                             | Skills view<br>Examples may include: training completed, relevant experience, referee endorsements |
| <br>Water Ways<br>GRINDERS         | Customer Operations Group employees: Those who have completed the small tools training within last five years<br>This requirement came into effect on 1 July 2019<br>Contractors: Those who have provided evidence to verify their competence | Skills View<br>Examples may include: training completed, relevant experience, referee endorsements |
| Nail guns   | Customer Operations Group employees: Those who have completed the small tools training within last five years<br>This requirement came into effect on 1 July 2019<br>Contractors: Those who have provided evidence to verify their competence | Skills view<br>Examples may include: training completed, relevant experience, referee endorsements |
| Powder Actuated Tools (eg Ramset Guns)  | All Operators: holding a Certificate of Competency relating to the make of tool being used.   | Skills view<br>Sight qualification for subcontractor   |

## 4.6 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.

## 4.7 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.

### 4.7.1 UNDERSTAND 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](http://www.caa.govt.nz/drones)
- ▶ For more advice contact Fulton Hogan's Chief Pilot.

### 4.7.2 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
- ▶ Keep the drone in sight at all times
- ▶ If you see another aircraft stay well clear of it and land immediately

### 4.7.3 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](http://www.airshare.co.nz)

### 4.7.4 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

*Refer to the UAV Flight Checklist | UAV Pre-launch checklist*

## 4.8 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).



## 4.9 Drivers and Operators – Minimum Requirements

Anyone operating vehicles, plant, or equipment while working for the Customer Operations Group or on Customer Operations Group worksites or jobs 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 Customer Operations Group Life Saving rules

## 4.10 Certified Safe

Certified Safe is the Fulton Hogan developed, mobile plant safety assurance system. It is our way of being sure that the company's safety requirements are in place and working.



Fulton Hogan owned (and leased) 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.

## 4.11 Vehicle Prestart Checks

Completed daily.

- ▶ Apply to all plant items that have a WoF, CoF, registration, or time licence
- ▶ Not required for single operator cars and utilities.

## 4.12 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



Refer to Energy section 6 and the [LOTO Procedure - NZ](#)

## Plant Design and Modifications

Refer to the [Plant Design & Modification Standard-NZ](#) for more detail.

Applies to:

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

\*Associated systems' means 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 alterations

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, or for the purpose of the COG, 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.

#### 4.12.1 DESIGN AND BUILD PLANT AND EQUIPMENT

We are responsible for ensuring that plant designed and / or built by Fulton Hogan, or for the purpose of the COG, 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.





## 5. Risk Management

### 5.1 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.

#### 5.1.1 RESPONSIBILITIES

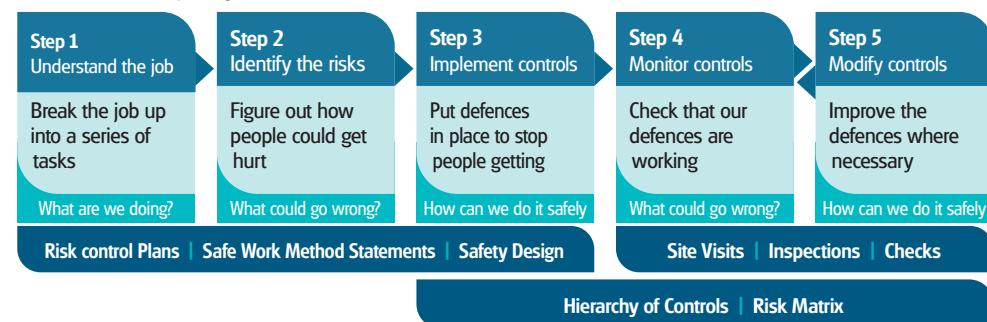
The table below allocates risk management responsibilities for the various phases of work:

| Phase                                     | Who                                  | Responsible for:  | Consult With                             | When   |
|---|--------------------------------------|---|--|--|
| Designing, tendering, or planning         | Designer/Team Leader                 | Minimising construction and operational HSQE risk through good design   | Constructors, Maintainers, Future users  | During design                                  |
|   | Team Leader                          | <ul style="list-style-type: none"> <li>Identifying HSQE risks during tendering</li> <li>Considering the cost of controls in the tender price</li> <li>Communicating any identified risks and controls to the project manager</li> </ul> | Physical works teams                     | During tendering                               |
|   | Service Delivery Manager/Team Leader | Planning work in such a way that: <ul style="list-style-type: none"> <li>HSQE risks are reduced</li> <li>Sufficient time and resources are allocated to managing risks</li> </ul>   | Supervisors and work teams               | Before physical work begins                    |
| Managing, supervising, or completing work | Service Delivery Manager/Team Leader | Checking that site and construction HSQE risks have been identified and effectively controlled  | Supervisors and physical works teams     | As often as the risk requires                  |
|   | Team Leader                          | 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 |
|   | Team Leader                          | Identifying and effectively controlling site and construction HSQE risks  | Construction teams                       | Daily and after significant change             |

### 5.1.2 MANAGING HSQE 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'.



### 5.1.3 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).

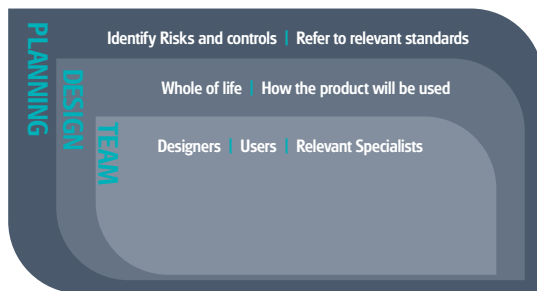
'Health and safety by design' is the process of managing health and safety risks throughout the lifecycle of structures, plant, substance or other products. Designers are in a strong position to make work healthy and safe from the start of the design process. Health and safety by design is not a separate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

Refer: *WorkSafe - Health and Safety by Design*

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 taken into account 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.



## MANAGING RISK USING RISK CONTROL PLANS (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.
- ▶ 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.

## 5.1.4 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.



Water Ways  
SAFE WORK  
METHOD  
STATEMENT



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

## 5.1.5 QUANTIFYING 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

|             |                    | Likelihood             |                        |                         |                        |                         |
|-------------|--------------------|------------------------|------------------------|-------------------------|------------------------|-------------------------|
|             |                    | Category               | Rare<br>1              | Highly<br>Unlikely<br>2 | Unlikely<br>3          | Possible<br>4           |
| Consequence | Substantial<br>100 | Moderate<br>(100) - 15 | High<br>(500) - 19     | High<br>(1000) - 22     | Extreme<br>(5000) - 24 | Extreme<br>(10000) - 25 |
|             | Major<br>70        | Moderate<br>(50) - 10  | Moderate<br>(250) - 14 | High<br>(500) - 18      | High<br>(2500) - 21    | Extreme<br>(5000) - 23  |
|             | Moderate<br>40     | Low<br>(10) - 6        | Moderate<br>(50) - 9   | Moderate<br>(100) - 13  | Moderate<br>(500) - 17 | High<br>(1000) - 20     |
|             | Minor<br>10        | Low<br>(5) - 3         | Low<br>(25) - 5        | Low<br>(50) - 8         | Low<br>(250) - 12      | Low<br>(500) - 16       |
|             | Minimal<br>1       | Low<br>(1) - 1         | Low<br>(5) - 2         | Low<br>(10) - 4         | Low<br>(50) - 7        | Low<br>(100) - 11       |

| Risk Level | Score WW    | Score FH | Parameters  |
|------------|-------------|----------|---|
|            | 501 - 10000 | 23 - 25  | If the post-control risk is <b>EXTREME</b> the activity <b>MUST NOT</b> proceed. Elimination, substitution, isolation and/or engineering controls must be put in place to reduce the risk rating to <b>LOW</b> or <b>MEDIUM</b> |
|            | 251 - 25000 | 16 - 22  | If the post-control risk is <b>High</b> the activity <b>MUST NOT</b> proceed. Alternate controls must be put in place to reduce the risk rating to <b>LOW</b> or <b>MEDIUM</b>  |
|            | 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  |

|           |                                     | Potential Consequence                      |   |   |   |  |
|-----------|-------------------------------------|--|---|---|---|--|
|           |                                     | Insignificant                              | Minor   | Significant   | Major   | Catastrophic   |
| Risk Type | 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 Hospitalisation                          | 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 Recommendation       | 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 \$25,000  | \$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   |

### 5.1.6 IDENTIFYING EFFECTIVE CONTROLS USING THE HIERARCHY OF CONTROLS - (STEPS 3 - 5)

We put controls in place to protect people from risk.

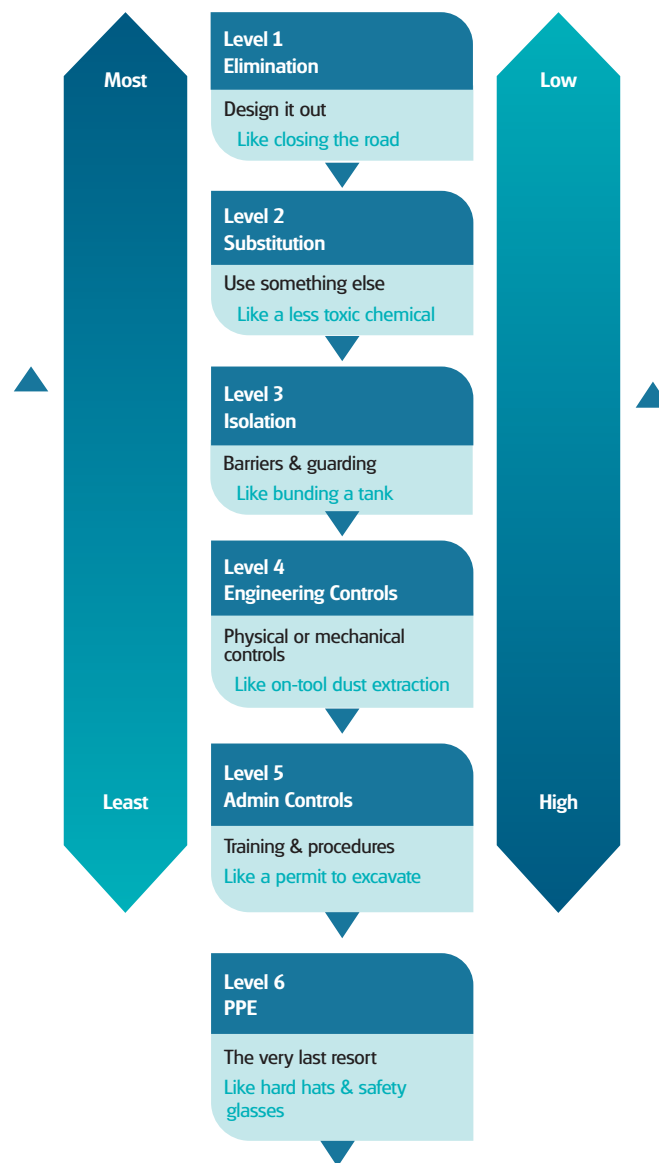
As we work through our 'Risk Control Plans' or our 'Safe Work Method Statements' it's important that we look to implement the most effective controls possible before we consider less effective options. Key points follow:

- ▶ 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 it's not feasible to eliminate the risk consider how the methodology might be substituted to reduce the risk
  - If it's 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).

### 5.1.7 MONITORING THE EFFECTIVENESS OF CONTROLS - SITE VISITS AND INSPECTIONS

All workers on site should consider whether or not controls are working throughout the workday because, for example, fences

#### HIERARCHY OF CONTROLS



may get moved (by people or wind) and traffic volumes may fluctuate. Managers are expected to complete leadership safety actions on site.

Refer to Section 14 of this manual for formal auditing requirements.



## 5.2 Life Saving Rules

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

These rules must be applied fairly and consistently across the Customer Operations Group. Subcontractors are also required to comply with these rules when working on our sites.

In the event that a Life Saving Rule is breached, we will follow our Just Culture principles. This allows us ensure we always put People First, while also addressing reckless and risk taking actions through our disciplinary process. In case of a deliberate breach, a formal investigation will take place in line with the disciplinary process.

## 5.3 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.

### JUST CULTURE PRINCIPLES

#### Exemplary

Staff always complies and also demonstrates leadership, commitment, teaching and championing good decision making to the wider team.

Scan team for examples. Acknowledge and recognise these behaviours, provide good feedback in front of the team. Visibly reward these behaviours.

#### Expected

Staff always complies with the rules and demonstrates good decision making to the wider team.

Scan team for examples. Acknowledge and recognise these behaviours, provide good feedback in front of the team.

#### Human Error

Staff makes a small mistake or lapse in judgement, leading to a rule breach by self or others.

Immediately warn the individual and educate them on the potential safety consequences of the breach. Re-educate them on the reason for the rules, the disciplinary process for breaches and potential disciplinary outcomes. Potentially, a verbal warning (documented on staff file) would be a minimum expectation of disciplinary consequence.

#### Risk Taking

Staff breaches rule, or causes rules to be breached by others, despite understanding the consequences, or exhibits repeat 'human error'

Immediately warn the individual and educate them on the potential safety consequences of the breach. Re-educate them on the reason for the rules, the disciplinary process for breaches and potential disciplinary outcomes. Potentially, a final written warning (documented on staff file) would be a minimum expectation of disciplinary consequence

#### Reckless

Staff intentionally, or recklessly breaches rules endangering self, or causes rules to be breached endangering others.

Immediately warn the individual and educate them on the potential safety consequences of the breach. Re-educate them on the reason for the rules, the disciplinary process for breaches and potential disciplinary outcomes. Staff immediately stood down and, potentially, summary dismissal would be an expectation of disciplinary consequence

## 5.4 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 banned but other cutting tools should be provided where practical
- ▶ Day time running lights are not mandatory
- ▶ 9" Grinders are only to be used where no other tool is practical and the operator is competent

## 5.5 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 receiver.
- ▶ 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                   | ✓          | ✓          |          |
| Tree felling                    | ✓          |            |          |
| Temporary works                 |            | ✓          |          |
| Lock out Tag out                |            | ✓          |          |
| Close proximity                 |            |            | ✓        |
| Kiwi Rail                       |            |            | ✓        |



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 (bullet) working in the rail corridor, working in close proximity to power lines and 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 rule helps protect us from a number of other significant risks that fall outside our normal Risk Groups.

### 5.5.1 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.

### 5.5.2 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.

### 5.5.3 DIGGING AND EXCAVATION

#### DO I NEED THIS PERMIT?

Yes:

- ▶ whenever we are digging, penetrating, raking, milling or otherwise disturbing the soil e.g. installing posts or waratahs etc, deeper than 150mm
- ▶ when we plan to be digging deeper than 1.5m, or;
- ▶ when ground conditions make trench collapse a possibility

Not when:

- ▶ we are replacing like-for-like road furniture e.g. marker posts in a rural location where it isn't practical to get plans
- ▶ after major earthworks have been completed and we are certain all services have been removed or confirmed as absent
- ▶ when grading an existing road or water table
- ▶ Hydrovacating ONLY with no hand-digging deeper than 150mm

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

#### IS WORKSAFE NOTIFICATION REQUIRED?

Yes, for:

- ▶ work in any drive, excavation or heading in which any person is required to work with a ground cover overhead
- ▶ 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
- ▶ 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.

### 5.5.4 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
- ▶ working from a ladder for longer than 10mins above 1.5m

No, when:

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

#### 5.5.5 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.
- ▶ the first stage is required when there is a risk from a hazardous atmosphere e.g. flammable gases or fumes, the second stage of the permit is for general hot work.
- ▶ Used oil
- ▶ Road marking paint
- ▶ Diesel fuel tanks or tankers (trucks and trailers)
- ▶ Kerosene tanks

###### No:

- ▶ if you're in an approved hot work area, or;
- ▶ if you are certain there is nothing within your work area that could catch fire or explode, or;
- ▶ 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.

| MAINTENANCE RECORD - NZS 4503 |     |     |     |     |     |      |      |     |      |     |     |     |    |
|-------------------------------|-----|-----|-----|-----|-----|------|------|-----|------|-----|-----|-----|----|
| Year                          | Jan | Feb | Mar | Apl | May | June | July | Aug | Sept | Oct | Nov | Dec |    |
| 19                            |     |     |     |     |     |      |      |     |      |     |     |     | 10 |
| 20                            |     |     |     |     |     |      |      |     |      |     |     |     | 11 |
| 21                            |     |     |     |     |     |      |      |     |      |     |     |     | 12 |
| 22                            |     |     |     |     |     |      |      |     |      |     |     |     | 13 |
| 23                            |     |     |     |     |     |      |      |     |      |     |     |     | 14 |
| 24                            |     |     |     |     |     |      |      |     |      |     |     |     | 15 |
| 25                            |     |     |     |     |     |      |      |     |      |     |     |     | 16 |
| 26                            |     |     |     |     |     |      |      |     |      |     |     |     | 17 |
| 27                            |     |     |     |     |     |      |      |     |      |     |     |     | 18 |
|                               |     |     |     |     |     |      |      |     |      |     |     |     | 19 |

In the example above the extinguisher was serviced in July 2019 and 2020 so is due again in July 2021.

The pressure check was completed in 2018 so is due in 2023.

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).

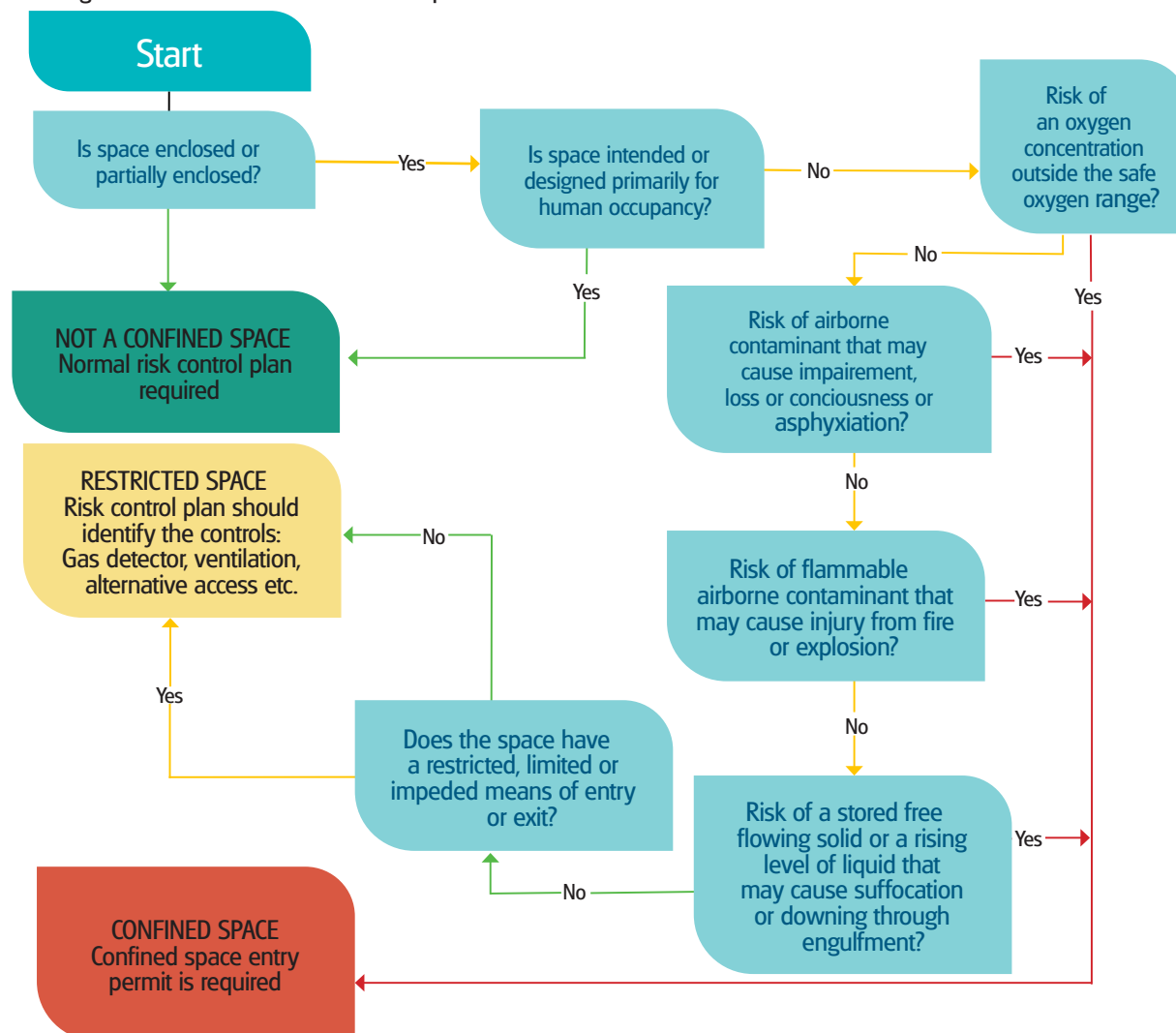
If working in a restricted space and the gas detector alarm sounds or there are any close calls related to the space then work must stop and a confined space permit worked through.



## 5.5.6 CONFINED SPACES

### DO I NEED THIS PERMIT?

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



This flowchart, the confined space permit and the risk control plan together provide a risk assessment for the confined space entry.

## 5.5.7 ASBESTOS WORK

There are permits covering:

- ▶ Asbestos related work
- ▶ 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). Refer to the diagram to the left and section 7.2 of this manual.

No;

When only removing pipes that are not damaged, or material <10m<sup>2</sup> over the entire project (*as per WorkSafe guidance*)

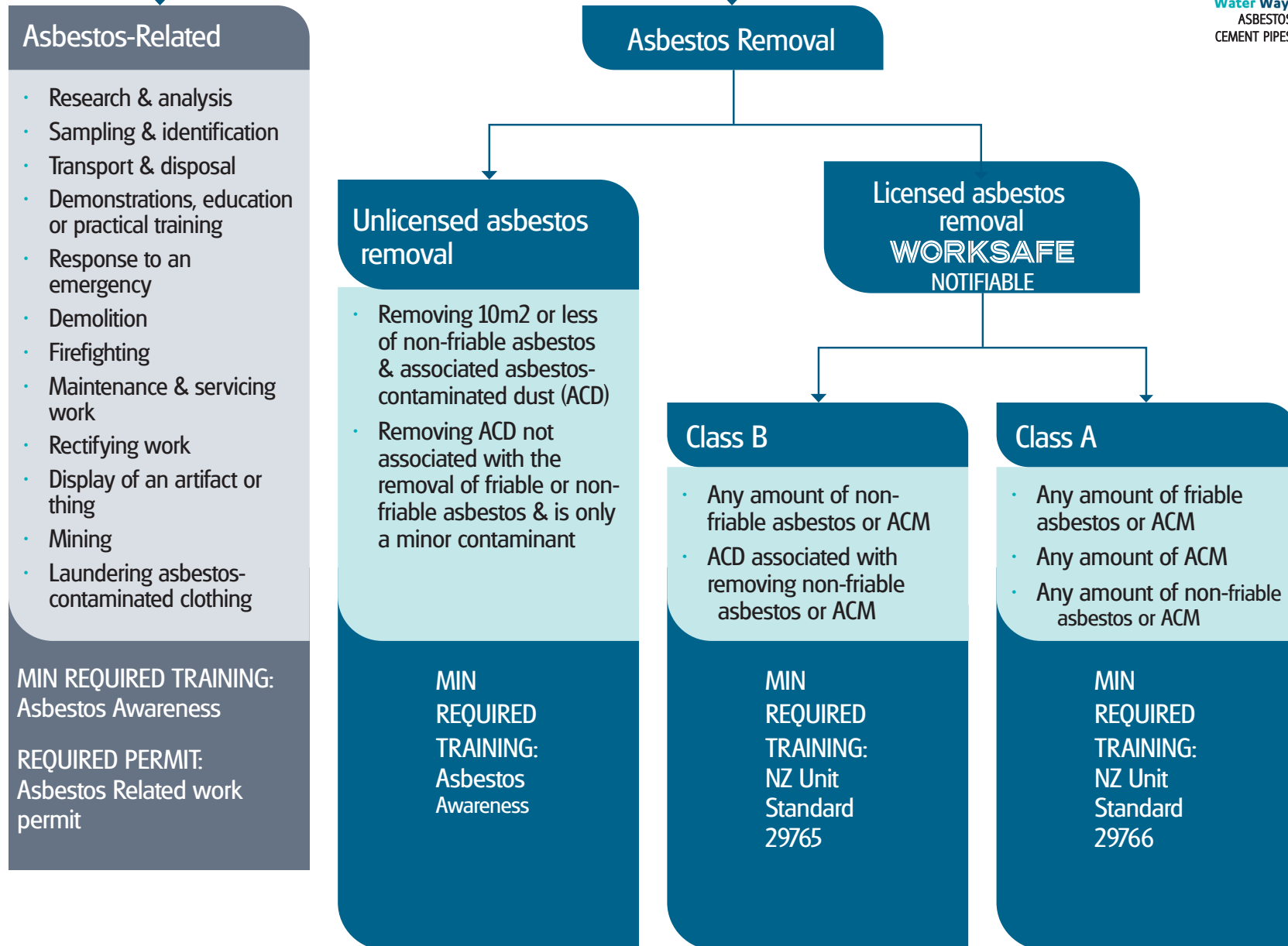
### IS WORKSAFE NOTIFICATION REQUIRED?

Yes;

When removing >10m<sup>2</sup> (over the entire project) of non-friable asbestos or any quantity of friable asbestos. Use online WorkSafe Asbestos notification process.



## Work Involving Asbestos



## 5.5.8 TEMPORARY WORKS

Refer to the [Temporary Works Procedure – NZ](#). If there is a conflict of information, the Temporary Works procedure should be assumed to be the most up-to-date source of information

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

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

The procedure includes permits to load and unload.

### TEMPORARY WORKS DESIGN/VERIFICATION MATRIX

| Minimum Level of Design & Verification Required |                             | Consequences of failure risk (see table) |             |        |              |
|---|-----------------------------|--|-------------|--------|--------------|
|   |                             | Minor                                    | Significant | Major  | Catastrophic |
| Design Complexity Risk (see                     | 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 Designed by suitably qualified / competent engineer

D3 Designed by chartered engineer CPEng

Minimum level of verification required;

V1 Verified by experienced competent site team using past experience

V2 Verified by suitably qualified / competent engineer

V3 Verified by chartered engineer CPEng



## 5.5.9 KIWIRAIL PERMIT - EXTERNAL

### DO I NEED THIS PERMIT?

Yes;

if you are working within 5m of the outermost rail. You will also need a rail protection officer (RPO)

### IS WORKSAFE NOTIFICATION REQUIRED?

No

## 5.5.10 CLOSE APPROACH PERMIT - EXTERNAL

### DO I NEED THIS PERMIT?

Yes;

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

Refer to the [Close approach – Proximity Permit Fact Sheet](#)

### IS WORKSAFE NOTIFICATION REQUIRED?

No



GoTo  
Rail  
Corridor Work



Water Ways  
OVERHEAD  
LINES AND  
POLES



## 6. Significant Safety Risks

### 6.1 Moving Plant

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

Three Life Saving Rules apply to moving plant:



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 clear of plant and machinery ourselves, we'll 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 eg RTs.



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 (and)
- ▶ On a specific site/s 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**

#### 6.1.1 SEATBELTS

Seat belts must be worn at all times where fitted.

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

#### 6.1 WORKING FROM A MOVING VEHICLE

This may occur when setting out traffic management.

Refer to *Securing Employees on the decks of moving traffic management equipment procedure*

### 6.2 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.

Refer to *NZTA for CoPTM updates*

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

The Life Saving Rule relevant to this critical risk is:



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

This Life Saving 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 refueling
- ▶ 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 Zealand's requirements are reflected in the Code of Practice for Temporary Traffic Management (COPTTM).

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 code of practice for temporary traffic management (CoPTTM). However, sometimes for our plan to be effective we will need to work to a higher standard than the code of practice.

Refer to GRWM - Health and Safety at Work (General Risk & Workplace Management) Regulations 2016

## 6.2.1 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 suitably 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.

## 6.2.2 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.

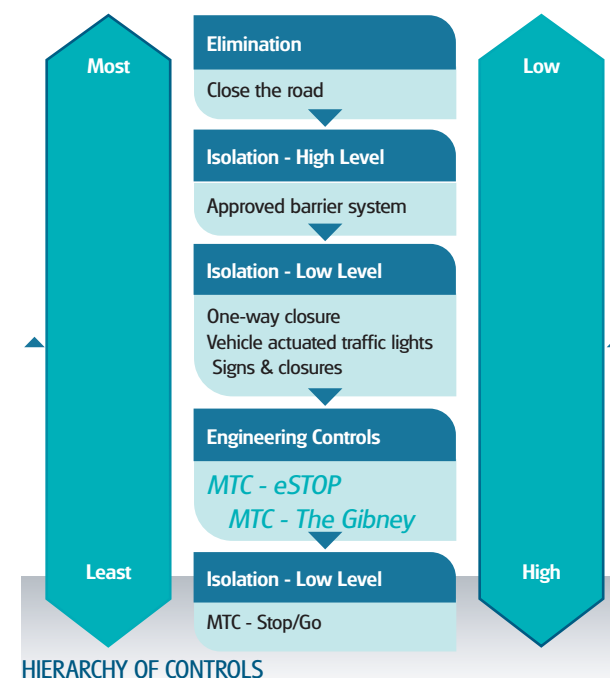
## 6.2.3 TRAFFIC CONTROLLERS OUT OF THE LINE OF FIRE

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'S

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 road side *eSTOP Operator Manual*
- ▶ **The Gibney (stop/go barrier arm)** used when eSTOP™ is unavailable. *The Gibney 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 is the same as for manual traffic control; operators should be a qualified TC or STMS or have completed the requirements of the CCNZ Manual Traffic Controllers handbook. Supervision should be provided until the operator has demonstrated competency with the equipment in use, including communication.

## 6.3 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.

Worksafe: *Working at Height guidance*



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.

In order for a breach of this rule to be established there must be a practical alternative control available that wasn't 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), EWPs 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 EWPs, harnesses, scaffolding and retrieval equipment |
| PPE                                | Fall arrest and lanyard systems.<br>A harness should not be used as the primary means of fall protection.   |

Refer to the *Working at Height Rules Booklet*

### 6.3.1 MECHANICAL ACCESS PLANT

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

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



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 operated them within the manufacturer's guidelines.

### 6.3.2 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. Refer to Scaffolding Inspection Checklist.

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

### 6.3.3 PREVENTION OF FALLING OBJECTS / 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 to prevent access to scaffold when not in use
- ▶ Lanyards or drop ropes on tools
- ▶ Store materials / equipment securely to prevent movement.

### 6.3.4 USE OF LADDERS

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



Water Ways  
LADDERS

- ▶ Where practicable consider the use of ladders that are engineered for the purpose they are intended for i.e. access

### 6.3.5 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 and when using weed eaters on a steep incline.

### 6.3.6 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.



GoTo  
Keep clear of  
suspended

## 6.4 Lifting suspended loads



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 may be used to help guide the load into position and make fine adjustments.

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

In addition to keeping clear of suspended loads ourselves we'll 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 dogman or spotter assigned to the work.

#### 6.4.1 CRANES

- ▶ Gantry crane
- ▶ Crawler crane
- ▶ Carrier mounted and all-terrain cranes
- ▶ Rough terrain crane
- ▶ Truck loader crane
- ▶ Articulated (Hamilton) crane

#### 6.4.2 OTHER PLANT

Includes:

- ▶ Excavators
- ▶ Loaders
- ▶ Tractors
- ▶ Telehandler with a jib
- ▶ Any other plant, when carrying loads suspended from the plant.

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 so operators need to know the load and lift limits and stay within them.

#### 6.4.3 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 should 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 recertified

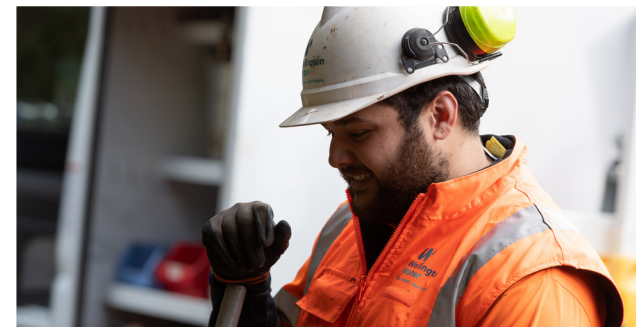
- ▶ Lifting equipment is only to be used for lifting; it is not suitable for tying down or towing. Lifting equipment designated for use with cranes must not be used with other plant e.g. excavators or loaders.

#### 6.4.4 MANAGING THE RISK FROM SUSPENDED LOADS

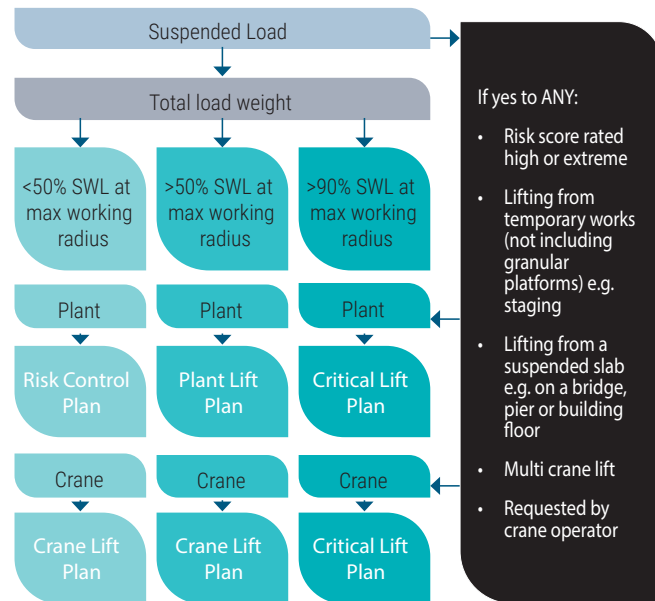
The primary means of controlling the risks from suspended loads is by using a risk control plan in conjunction with a lift plan. Lift plans are a tool used to ensure a lift is not outside the normal operating conditions of the particular lifting appliance being used.

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



#### 6.4.5 WHICH LIFT PLAN DO I NEED?



#### 6.4.6 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 work load 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)

#### 6.4.7 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.

### 6.5 Energy

For specific information about electrical standards refer to the [Electrical Standards Manual - NZ](#).

#### 6.5.1 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 are 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.



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

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

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

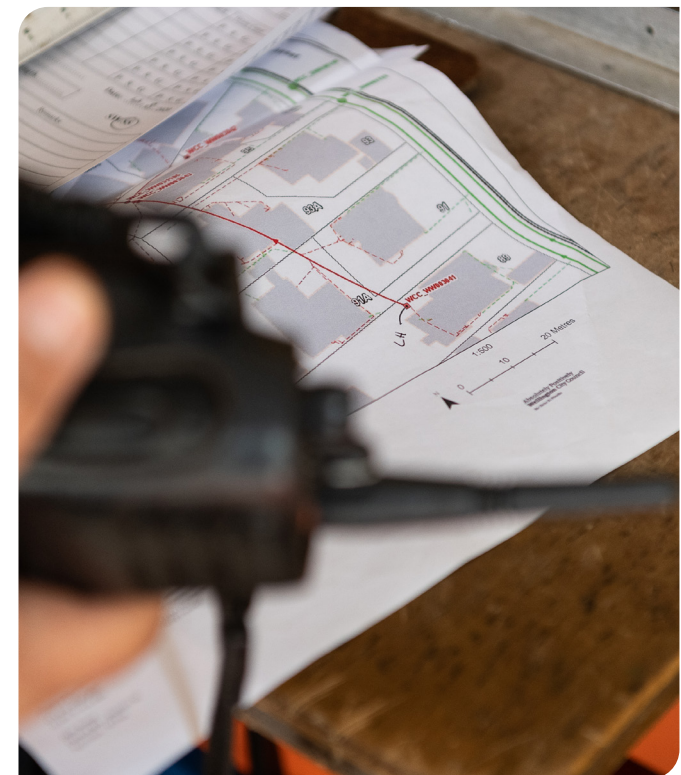
- ▶ Where there is no risk to workers, the public or the environment

##### Fault testing on electrical equipment

- ▶ Where the equipment has to 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



## 6.5.2 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  |

### LOCK OUT – PROTECT 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 – PROTECT 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.



### PERMITS

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 / COMPETENCE

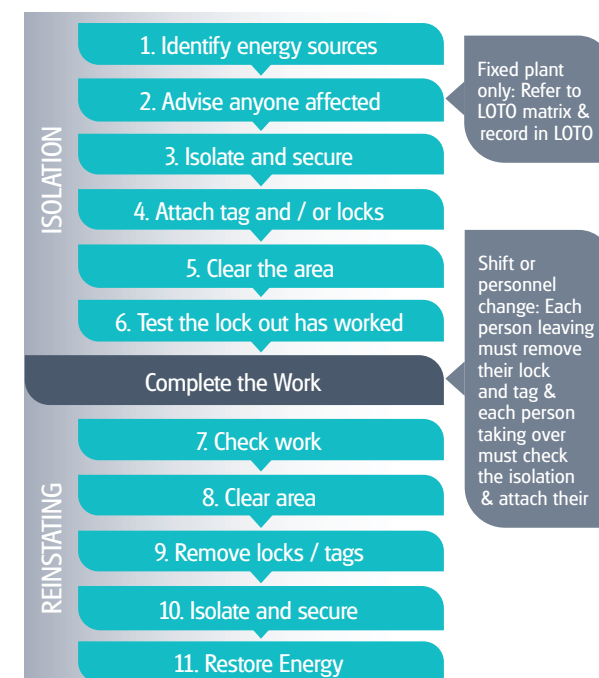
Isolators must be trained in lock out processes. This includes completing unit standard 25043 and they must be deemed competent by Senior Isolator.

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.





### 6.5.3 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 should be a Risk Control Plan for this work.

PPE requirements are:

|             | Office DBs | Small<br>Less than 125A | Medium<br>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 presents 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.

## 6.6 Digging / Excavation

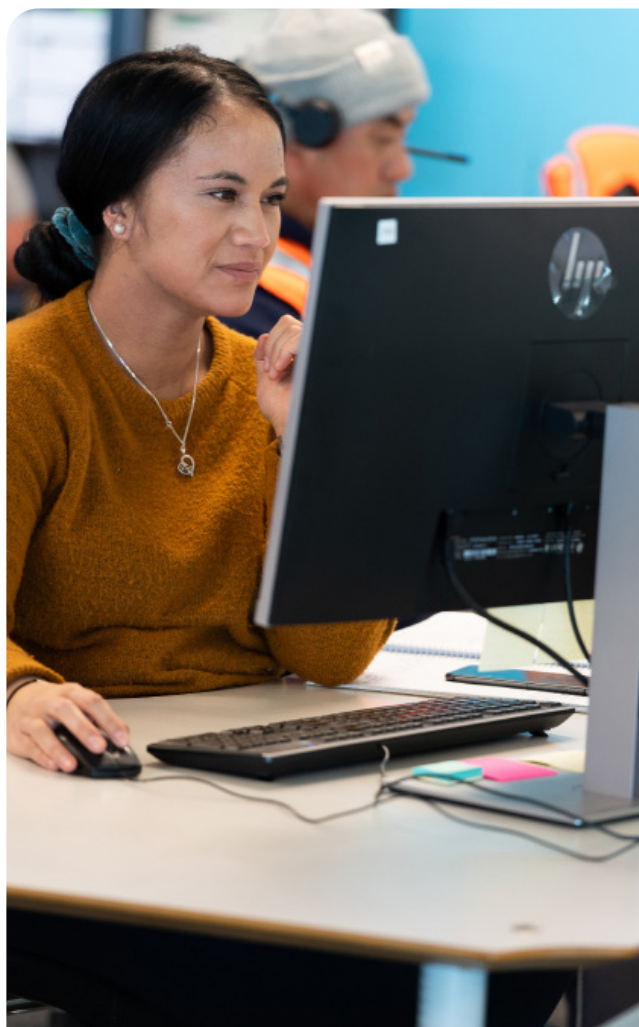
Risks from digging and excavating include:

- ▶ Service strikes
- ▶ Falling in
- ▶ Trench collapse

- ▶ Fumes from plant and equipment (consider potential for confined space)

By following the digging and excavation permit process you will address most of these risks.

Worksafe: *Excavation guidance*



## 6.7 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

### 6.7.1 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.

### 6.7.2 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.

### 6.7.3 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.





## 6.74 APPROVED SUPPLIERS

### 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  |
| Contact details | Ph: 04 527 9813<br>Attn: Steve Kooge<br>027 527 9816           | Phone: 0800 453 422<br>Attn: Ray Copeland<br>0274 928 533          |
| Website         | <a href="http://www.rdlocators.co.nz">www.rdlocators.co.nz</a> | <a href="http://www.globalsurvey.co.nz">www.globalsurvey.co.nz</a> |

### 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.

## 6.75 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.

## 6.76 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.

## 6.8 Manual Handling

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



Water Ways  
MANUAL  
HANDLING



### 6.8.1 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 unwieldy 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.

For complex lifting tasks use the Health and Safety Executive’s manual handling assessment charts:

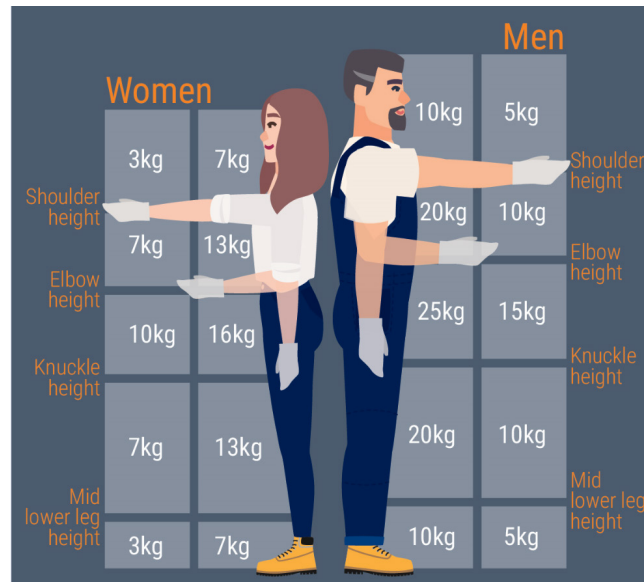
<http://www.hse.gov.uk/pubns/indg383.pdf>.

These can be complicated if you haven’t used them before; ask your safety manager for assistance.

### 6.8.2 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

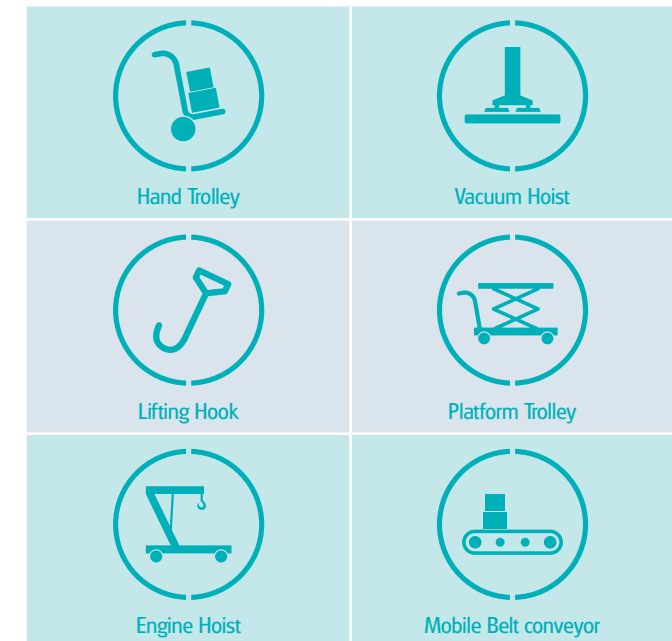
As technology improves, structural materials are becoming lighter and sufficiently strong for the task. Examples include lightweight aggregate blocks and carbon fibre instead of steel.

Where necessary reduce the package size, for example to 20kg bags of concrete rather than 40kg. As this may require more trips it often has to 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:



#### TRAINING (ADMINISTRATION)

First Move is Fulton Hogan’s core manual handling training program. It helps workers identify their “autopilot” and how to change the way they move so they are in balance and protecting their back. The six key learnings areas are:

- ▶ Balance
- ▶ Twisting
- ▶ Hands
- ▶ Arms
- ▶ Breathing
- ▶ Lifting

#### 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.

## 6.9 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 Section 5.5 Permits.

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.

### 6.9.1 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, contaminants 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.

### 6.9.2 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

### 6.9.3 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 (O<sub>2</sub>), hydrogen sulphide (H<sub>2</sub>S), 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 should be bump tested before each use and again if the detector is dropped or damaged.

### 6.9.4 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
- ▶ signage

- ▶ intrinsically safe torch
- ▶ radio (RT)
- ▶ ventilation system
- ▶ first aid kit
- ▶ fire equipment.

Do not use petrol powered equipment.

### 6.9.5 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 complete an incident notification via OFI 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 exit all persons are to be accounted for by the stand-by person. The responsible manager will complete an incident notification via OFI or MyVoice.

#### EMERGENCY RESCUE – HAZARDOUS ENVIRONMENT

Immediately alert others in 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
- ▶ Or, if 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 exit everyone is the stand-by person needs to account for everyone. The responsible manager will complete an incident notification via OFI or MyVoice.

### 6.10 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 or gas cutting, or tasks where static energy could be generated.

Hot work permits are required (refer 5.5.5) 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*



## 6.11 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 eg EPIRB, 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.

## 6.12 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 <https://hazardoussubstances.govt.nz/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 <https://hazardoussubstances.govt.nz/calculator> (Using the HSR number of section 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). On theHub SDS are available by searching "SDS" or using the Safety Data Sheet tool
- ▶ 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

### 6.12.1 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.

### 6.12.2 DIRECT IMPORTING OR MANUFACTURE OF HAZARDOUS SUBSTANCES

Contact the National Manager – Health and Safety for advice prior to starting.

#### 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 Section 4 above.

### 6.12.3 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)

## 6.13 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).

Refer *Crusher Guarding Guideline – Asphalt Plant* for general guarding principles

## 6.14 Rail

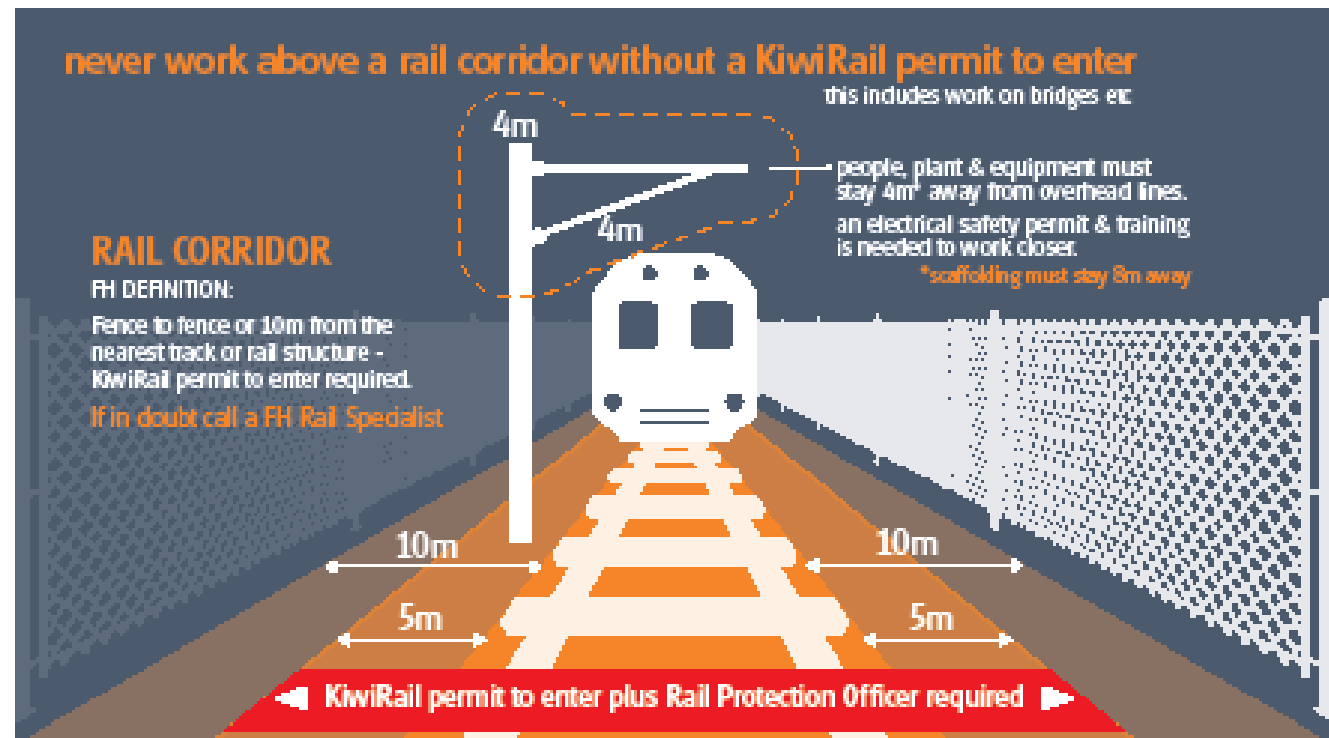
There are a number of requirements that need to be met before work is undertaken in the rail corridor. Our definition for the rail corridor is fence to fence or where there are no fences, 10m from the nearest track and 10m from the nearest rail

structure, eg. Overhead wire pole, horizontally and vertically. Refer to the GoTo – Rail corridor work for more detail.

### 6.14.1 WORK IN THE RAIL CORRIDOR

#### TO WORK IN THE RAIL CORRIDOR

- ▶ Contact a FH rail specialist to confirm specific requirements eg 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



#### 6.14.2 RAIL PROTECTION OFFICERS (RPO)

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

##### RAIL PROTECTION OFFICER RESPONSIBILITIES

- ▶ 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 movements
- ▶ 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)

#### 6.14.3 HI-RAIL VEHICLES (HRV'S)

Hi-Rail vehicles are specialised vehicles designed for working on the rail network. They must have a current KiwiRail Loco 155B RcoF as well as meeting our plant minimum standards relevant to their type. Refer KiwiRail OPM94001 Hi-Rail code or contact an FH Rail Specialist for additional requirements.

All HRV's operating in the rail corridor must do so under the protection of an RPO and in accordance with other requirements detailed in the KiwiRail Track Safety Rules

##### DRIVERS OF HRV'S MUST

- ▶ Hold a current road drivers licence for the vehicle class concerned
- ▶ Have a current KiwiRail qualification TPBM (Track Protection Basic Machines)
- ▶ Have undertaken FH Competency to Operate for the vehicle







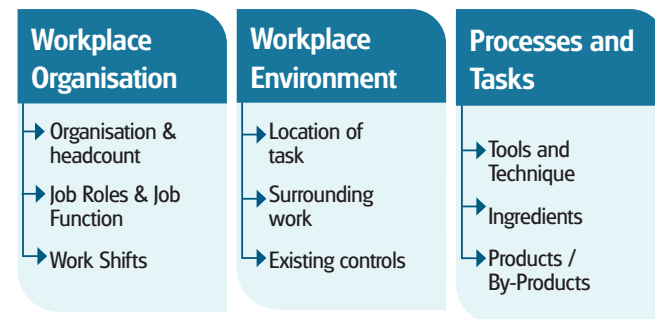


## 7. Significant Health Risks

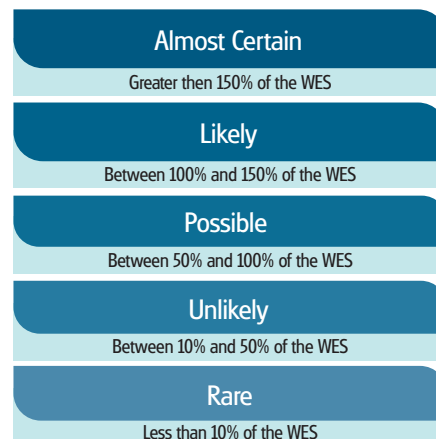
Health risks are often grouped into:

- ▶ Physical
- ▶ Chemical
- ▶ Biological, and
- ▶ 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.



Once that information has been gathered, the workplace exposure standards (WES) for a substance can be used to estimate how likely harm is to occur.



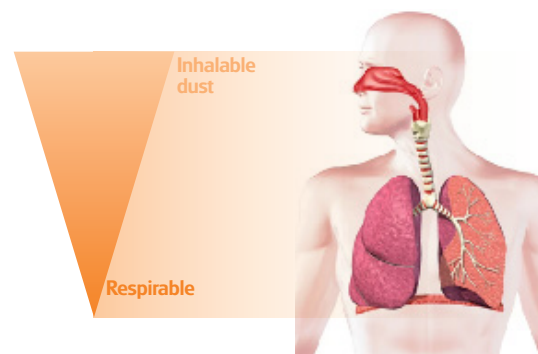
## PHYSICAL

### 7.1 Dust

#### 7.1.1 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/m<sup>3</sup> for respirable particulates and 10mg/m<sup>3</sup> for inhalable particulates.

#### 7.1.2 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

### 7.1.3 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.



## 7.2 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. In 2010 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.

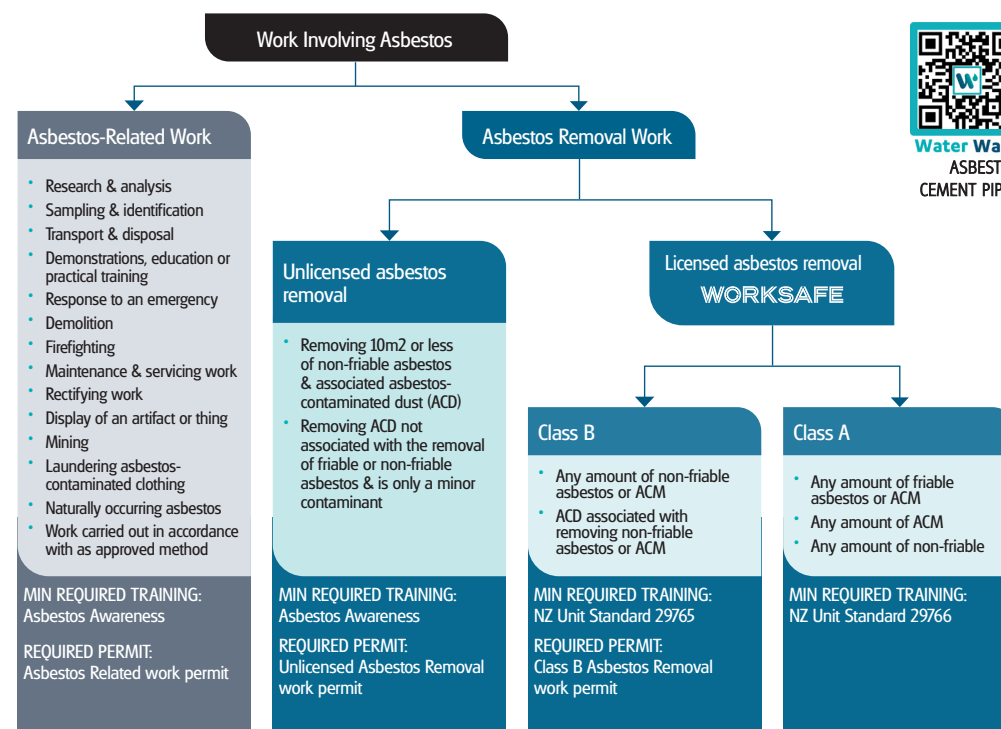
Our work often involves asbestos, whether it be contaminated soils or working with asbestos containing products such as asbestos cement pipes. We also need to consider the risk from asbestos when doing maintenance / electrical work and demolition.

- ▶ 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

### WORK TYPE

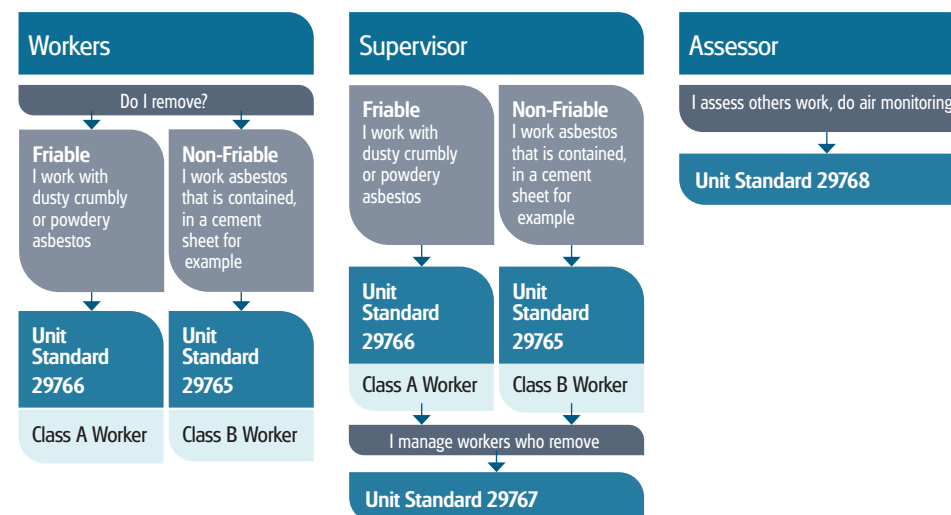
During the work planning stages we must understand what type of work involving asbestos we are to carry out. You can see in the diagram on the next page (taken from the ACOP) the respective work types are either 'Asbestos Related' or 'Asbestos Removal'. Each work type has different requirements for licensing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

All workers carrying out work that involves asbestos must be trained. Workers carrying out removal or assessor work have additional training requirements:





## DECISION MAKING

We're developing the specific approach to managing asbestos for the Customer Operations Group to manage. Updated content will be provided through an update notice. In the mean time make use of the waterways guide using the QR code which describes how to work with asbestos cement pipes.





## 7.3 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).

### 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                                 | <ul style="list-style-type: none"> <li>▶ Excavator (85 dB)</li> <li>▶ Portable generator (85 dB)</li> <li>▶ Grinder (86 dB)</li> <li>▶ Welding machine (85-90 dB)</li> </ul>                |
| 91             | 2 hours                                 | <ul style="list-style-type: none"> <li>▶ Crane (90 dB)</li> </ul>   |
| 94             | 1 hour                                  | <ul style="list-style-type: none"> <li>▶ Compactor - no cab (94 dB)</li> <li>▶ Masonry saw (95 dB)</li> </ul>   |
| 97             | 30 mins                                 | <ul style="list-style-type: none"> <li>▶ Quick-cut saw (96 dB)</li> <li>▶ Jack hammer (96 dB)</li> <li>▶ Circular saw and hammering (96 dB)</li> <li>▶ Chipping concrete (97 dB)</li> </ul> |
| 100            | 15mins                                  | <ul style="list-style-type: none"> <li>▶ Impact wrench (108 dB)</li> </ul>  |

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. quarry plant room, vehicle cab

**Engineer** - Maintain gear and buy quiet

### 7.3.1 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 other 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.

### 7.3.2 HEARING PROTECTION

#### EAR PLUGS

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 can't 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.

#### MOULDED 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.

#### EAR MUFFS

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.

Hearing protection should be approved by Work-Safe NZ on the *classified hearing protectors* list

#### 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

## 74 Vibration

### 74.1 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 every day 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.

*HAV information from the UK*

#### 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



## 75 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.

### 75.1 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.

### 75.2 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.

[Refer Fatigue Management Safety Essentials: Heat Safety](#)

## 76 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

## 7.6.1 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 balanced with other risks on site eg the need for hard hats or goggles.

## 7.6.2 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.

## 7.6.3 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. Otherwise 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.

## 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 (example 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 below)
- ▶ 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.

Example of a paint injection wallet card:

| EMERGENCY PROCEDURE  |   |  |  |
|--|---|--|--|
| <b>CAUTION</b> If skin is hit by sprayed liquid - contact a Doctor <b><u>IMMEDIATELY</u></b> because any skin penetration can cause permanent injury |   |  |  |
| Note to Physician  | Injection of paint or solvents into skin is a serious, traumatic injury.<br><br><b>IT IS IMPORTANT TO TREAT THE INJURY SURGICALLY AS SOON AS POSSIBLE.</b><br><br>Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable | The seriousness of the wound depends on the body, whether the substance hit something on the way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound.<br><br>The treatment that Doctors recommend for an injection injury includes immediate decompression of the vascular components of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement and immediate antibiotic treatment. |  |
| CONTACT: National Poisons Centre   |   | Phone 0800 764 766   |  |

| WARNING  |        |   |   |
|--|--------|---|---|
| BEFORE turning ON pump   | ALWAYS | <ul style="list-style-type: none"><li>Follow the recommendations for maximum pressures</li><li>Follow operations instructions</li><li>Lock gun in OFF position if equipped with safety lock</li><li>Check all connections for leaks</li></ul> | Airless spray equipment develops extremely high paint pressures   |
| BEFORE removing or adjusting any part of paint equipment - including tip | ALWAYS | <ol style="list-style-type: none"><li>Shut off pump</li><li>Discharge contents of gun into container to eliminate pressure</li><li>Lock gun to off position</li></ol>   | Severe injury may result from any skin penetration  |
| WHEN discontinuing painting operation                                    | ALWAYS | <ul style="list-style-type: none"><li>Shut off pump</li><li>Discharge contents of gun into container to eliminate pressure</li><li>Lock gun to off position</li></ul>   | <b>NEVER</b> <ul style="list-style-type: none"><li>put your hand or fingers in front of gun</li><li>point gun at your body - or anyone else</li><li>leave gun pressurised when not in use</li><li>leave handgun pressurised when unattended</li></ul><br><small>New Zealand Roadmarkers Federation Inc.</small> |

## CHEMICAL

### 7.7 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 to eyes and lungs. Common risks within our business include:

- ▶ Diesel fumes
- ▶ Hydrogen sulphide (from waste water 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.

### 7.8 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)

### 7.9 Hydrogen Sulphide

Hydrogen Sulphide ( $H_2S$ ) 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.

| $H_2S$ Concentration | Symptoms   |
|----------------------|--|
| 0 – 5ppm             | Rotten eggs can be smelt   |
| 20ppm                | Fatigue, dizziness, headaches  |
| 50 – 100ppm          | Eye and airway irritation  |
| 100ppm               | Loss of smell (so can't identify higher exposures without a gas detector)  |
| 100 – 150ppm         | Coughing, eye irritation.<br>Exposure for more than 15 minutes can cause drowsiness and then increasing symptoms.<br>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.<br>Death within 30 – 60 minutes   |
| 700 – 1000ppm        | Immediate collapse within 2 minutes. Death within minutes  |

Where we identify that  $H_2S$  could be a risk we should 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.  $H_2S$  is heavier than air so we need to be particularly cautious if a trench has been open overnight and  $H_2S$  could have accumulated.

Generally sealing and asphalt operations are NOT at risk because of the relatively small volumes of bitumen in use. This has been checked by using gas detectors on a variety of sites. Bitumen plants check the  $H_2S$  levels during ship deliveries.



## 7.10 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.

## 7.11 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 until the pH is neutral. Serious burns require urgent medical attention.

## BIOLOGICAL

### 7.12 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.

## 7.13 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

For more detailed advice refer to [the Ministry of Health's Immunisation Handbook](#).

## 7.14 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.

## 7.15 Infection

Refer to the [Pandemic Plan NZ](#)

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. The COVID personal health flowchart is a good guide as to whether to seek further medical advice.

## 7.16 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 (add HS(GRWM)Regs note) although initial screening to assess the scale of the risk may be able to be done inhouse.

### 7.16.1 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

### 7.16.2 HUMAN FACTORS / ERGONOMISTS

Registered with HFESNZ, and preferably HASANZ, they provide;

- ▶ workplace design
- ▶ fatigue / hydration assessments

### 7.16.3 OCCUPATIONAL HEALTH NURSES

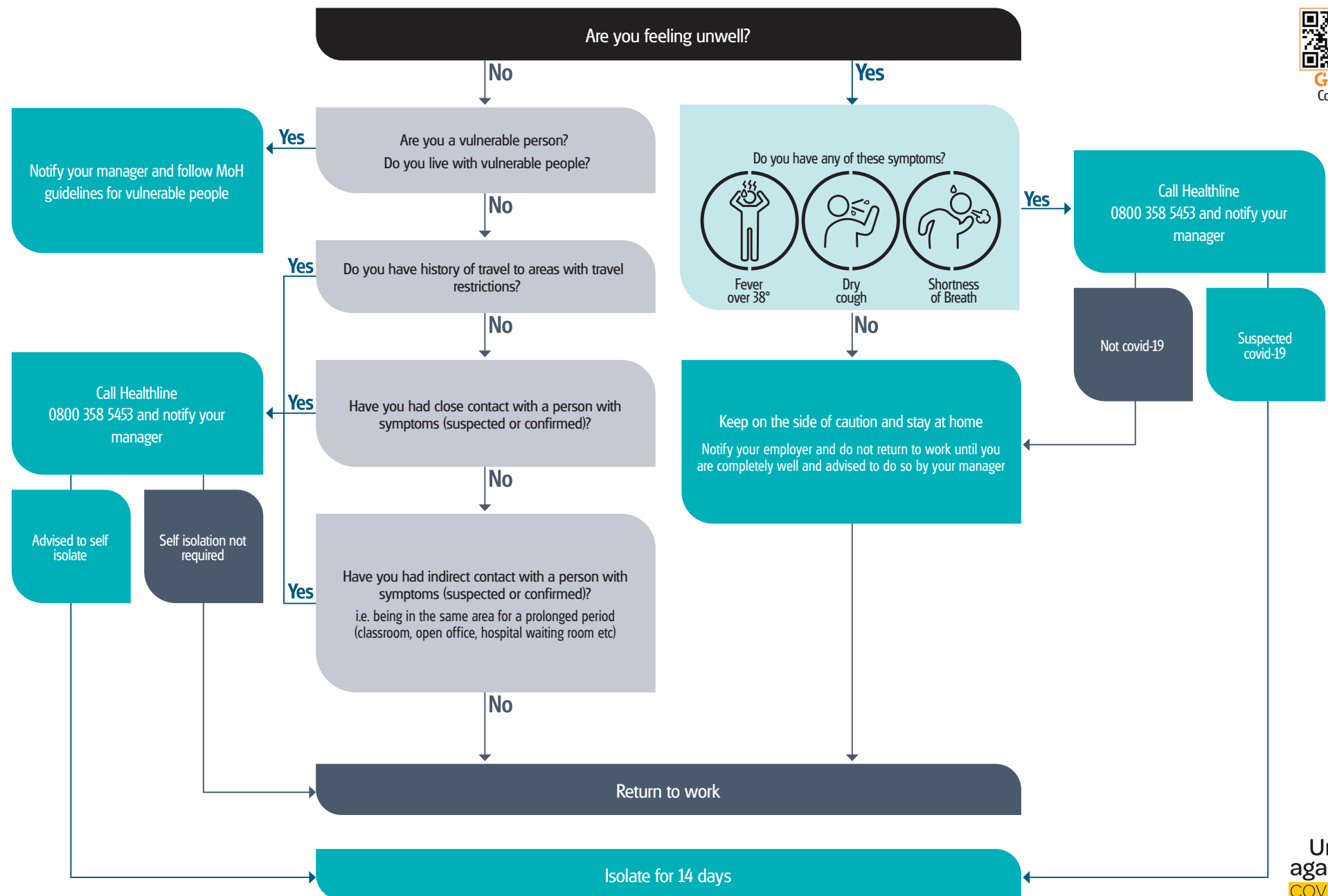
Preferably registered with NZOHNA, they provide;

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

### 7.16.4 OCCUPATIONAL THERAPIST / PHYSIOTHERAPIST

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





## 8. Contractors / Subbies

### 8.1 Pre-qualification

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.

### 8.2 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.

### 8.3 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

#### 8.3.1 JDE SET UP

Arrange this via the local finance team

#### 8.3.2 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.

#### 8.3.3 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.

#### 8.3.4 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.

### 8.4 Sublet approval (Use of subcontractors by a subcontractor)

Written approval must be granted for a subcontractor to further subcontract out work for the Customer Operations Group; 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.

### 8.5 Induction

From August 2020 a video-based site induction will be 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.

### 8.6 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 should 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.

#### 8.6.1 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 (i) fit for purpose and (ii) 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 alcohol or drugs

#### 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.

These requirements can be met by using the [Subcontractor Audit Tool - NZ](#)



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](#).

SUMMARY TABLE

| Contract Type   |   | Contract   | Pre-Qualification                            | Induction  | Inspection/Audit                              | Review                          |
|---|---|--|--|--|---|---------------------------------|
| <br>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<br>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<br>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&Cs or Letter of Engagement                                 | No   | People – Signing in on site/ Site rules<br>Plant – Yes                                     | No  | No                              |
| <br>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                             |
| <br>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                              |
| <br>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<br>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<br>Plant – Yes                                 | Yes – at least once in 12 months              | Yes - If on Framework Agreement |
| <br>Technical Services | Technical - Design & drafting services including temporary and permanent works.   | Design Services  | Yes - If work ON-SITE                        | People – If work ON SITE<br>Induction Video & site orientation<br>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&Cs or Letter of Engagement                                     | Yes - If work ON-SITE                        |  | Covered as part of standard checks if on site | Yes                             |
| <br>Suppliers          | Supplier – Critical to works e.g. Pipes, concrete structures, wet concrete delivery   | Supply Agreement   | Yes  | People – Signing onto site<br>Plant - No   | No  | Yes                             |
|   | Supplier – non critical e.g. minor materials, consumables etc. Includes couriers, goods delivery  | N/A – set up as vendor   | No   | People- Signing onto operational sites   | No  | No                              |

Anyone who is using a letter of engagement or signing up to a provider's terms and conditions are exempt from prequalification.

For more detail please refer to the Subbie Manual (in the case of any conflict, the Subbie Manual takes precedence).

## 9. Incident Response and Emergency Planning

### 9.1 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](#).

#### 9.1.1 TRAINING

The planning above should include identification of training requirements for emergency management eg 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, eg Stop the Bleed or Paramedic level first aid.

### 9.2 Drills

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

- ▶ Sealing crew – practice using a burns kit, understanding the burns card and calling the burns line
- ▶ Drainage crew – safely practice getting someone out from a trench collapse
- ▶ Civil crews – practice a work at height rescue
- ▶ Concrete or emulsion – practice for an environmental release

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:

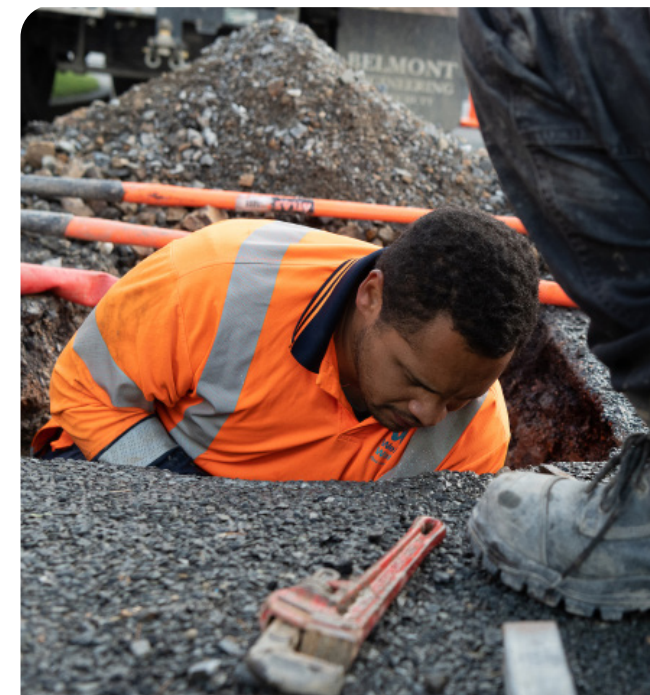
- ▶ Chemical, oil and fuel spills
- ▶ Fires and explosions
- ▶ Encountering unexpected contaminated soil
- ▶ Encountering unexpected cultural heritage sites
- ▶ Service strikes and leaks – water and wastewater networks

### 9.3 Building Evacuation Schemes

Relevant buildings that require an approved evacuation scheme include:

- ▶ Buildings where 100 or more people can gather together.
- ▶ 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. Refer to the Evacuation Scheme Information on the FENZ website: <https://onlineservices.fire.org.nz/Home/EvacuationSchemes>





## 10. Emergency Management

### 10.1 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.

### 10.2 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.

### 10.3 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 (refer to contract and / or consent conditions) such as Heritage NZ, environmental specialist or client rep.

#### 10.3.1 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 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

### 10.4 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.

### 10.5 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.





## 11. Reporting

### 11.1 Incident Reporting

All incidents should be reported accurately as soon as possible after they've occurred. Reporting may be verbal initially followed up by an CAMs report – either paper 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 called in to the responsible manager before being entered in to MyVoice. *Senior Management Notification* must be sent within 24 hours of the incident.

Notification of injuries and/or life saving rule breaches is based on the risk of the event.

#### 11.1.1 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.

#### 11.1.2 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.

### 11.2 Incident Notifications

Summary:

| 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) | ✗        | ✗              | within 24 hours | within 24 hours |
| Regulator (eg WorkSafe, Regional Council) | ✗        | ✓if notifiable | ✓if notifiable  | ✓if notifiable  |

#### 11.2.1 REGULATOR – HEALTH & SAFETY

Refer to s23-25 of the Health and Safety at Work Act 2015 or the notifiable events flowchart. 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 your SQTE 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.

### 11.2.2 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 Group Manager must approve the release of any report.

### 11.2.3 REGULATOR – ENVIRONMENTAL

*Content under development.*

### 11.2.4 CRASHES AT WORK SITES UNDER FULTON HOGAN CONTROL (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.

## 11.3 Legal Privilege and Legal review

On occasion, Fulton Hogan following discussion between the Senior Leadership Group, the Group Manager or CEO may require that the investigation be completed under legal privilege. In this instance, the GM or CEO will notify Counsel immediately.

GM or CEO authority, in discussion with general counsel, is also required prior to the engagement of legal advisors.

When it is decided to investigate an incident under legal privilege, General Counsel will send HSQE Analyst the CAMs Number (advised by the HSQE Manager) and the following status description to be entered into our system:

*“This incident is being investigated by HSQE and our legal teams under legal privilege. The investigation report will not be circulated with any internal reporting. HSQE and/or senior Management will update the business with key findings and learnings as appropriate and on a case by case basis.”*

A full legally-privileged investigation report will not be issued to the whole business. Instead senior management will manage and distribute the learnings, and identify key recipients with tailored appropriate communications as per the statement above.



## 12. Incident Investigation

### 12.1 Selecting the level of investigation required

The investigation required is determined by the risk rating of the incident:

| Risk rating chart          |   | Potential consequence level |         |             |   |              |
|----------------------------|---|-----------------------------|---------|-------------|---|--------------|
|                            |   | Insignificant               | Minor   | Significant | Major                                   | Catastrophic |
| Potential likelihood level | Almost certain<br>expected to occur in most circumstances | med 11                      | high 16 | high 20     | ext 23                                  | ext 25       |
|                            | Likely<br>probably occur in most circumstances            | med 7                       | med 12  | high 17     | Cat 1: Significant Investigation Report |              |
|                            | Possible<br>expected to occur at some time                | low 4                       | med 8   | med 13      |   |              |
|                            | Unlikely<br>could occur at some time                      | low 2                       | low 5   | med 9       | med 14                                  | high 19      |
|                            | Rare<br>may occur in exceptional circumstances            | low 1                       | low 3   | low 6       | Cat 2: Standard Investigation Report    |              |

**Cat 3: Investigation not mandatory** (Low 1-4)

### 12.2 Summary of requirements

|  | Category 1  | Category 2   | Category 3               |
|--|---|--|--------------------------|
| Notifications (refer previous chapter) | Verbal to immediate manager<br>Senior Management notification   | Local CAMs notifications   | Local CAMs notifications |
| Investigation reporting tool           | <i>Significant Investigation report</i>   | <i>Standard Investigation report</i>   | Nil required             |
| Investigation exemption                | Local HSQES Mgr.  | Local HSQES Mgr.   | N/A                      |
| Report due & actions in CAMs           | 30 days   | 15 days  | N/A                      |
| Investigation team                     | <ul style="list-style-type: none"> <li>Local independent lead eg HSQES Mgr. or Manager from different area</li> <li>Industry specialist where relevant</li> <li>NZ HSQES team will lead for extreme rated events</li> </ul> | <ul style="list-style-type: none"> <li>Local lead</li> <li>Industry specialist where relevant</li> </ul> | N/A                      |
| Peer review                            | Yes   | Yes  | N/A                      |
| Alert expected                         | Yes   | Local decision   | No                       |

### 12.3 Investigation teams

Lead investigators should be chosen based on experience in the industry area or ability to provide independent advice. The Group Manager 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.

### 12.4 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.

#### 12.4.1 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.

#### 12.4.2 LOCAL ACTIONS

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

### 12.5 Investigation analysis tools

The investigator / investigation team has freedom to choose how they investigate and analyse their findings eg 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.



## 12.6 Alerts

### 12.6.1 PURPOSE

- ▶ to communicate any incident that impacts on our business;
- ▶ as triggers for “lessons learned” to review, update and continually improve our business practices and processes.

### 12.6.2 SAFETY 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.

### 12.6.3 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.

### 12.6.4 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.

### 12.6.5 QUALITY ALERTS

*Quality Alerts* shall be used to communicate learnings from any regional/project formal investigation following an incident. Extreme, High, Medium and Low Risk incidents qualify for Quality Alerts.



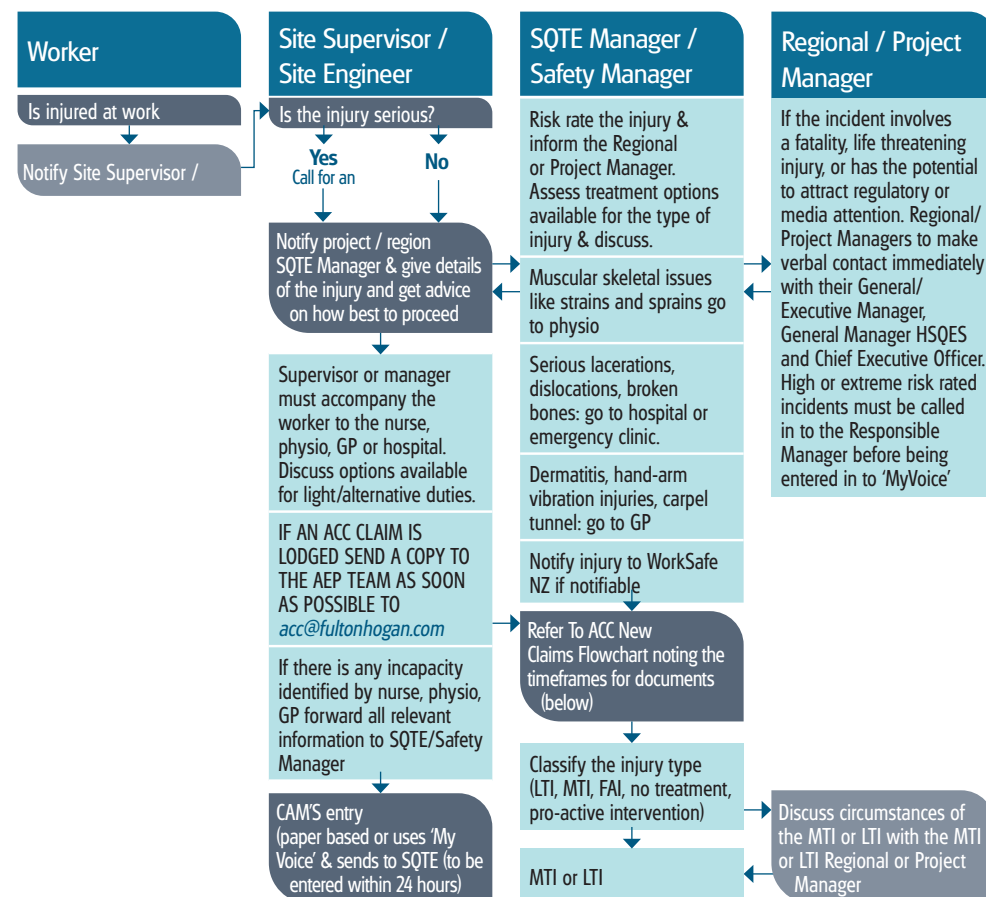


## 13. Rehabilitation and Return to Work

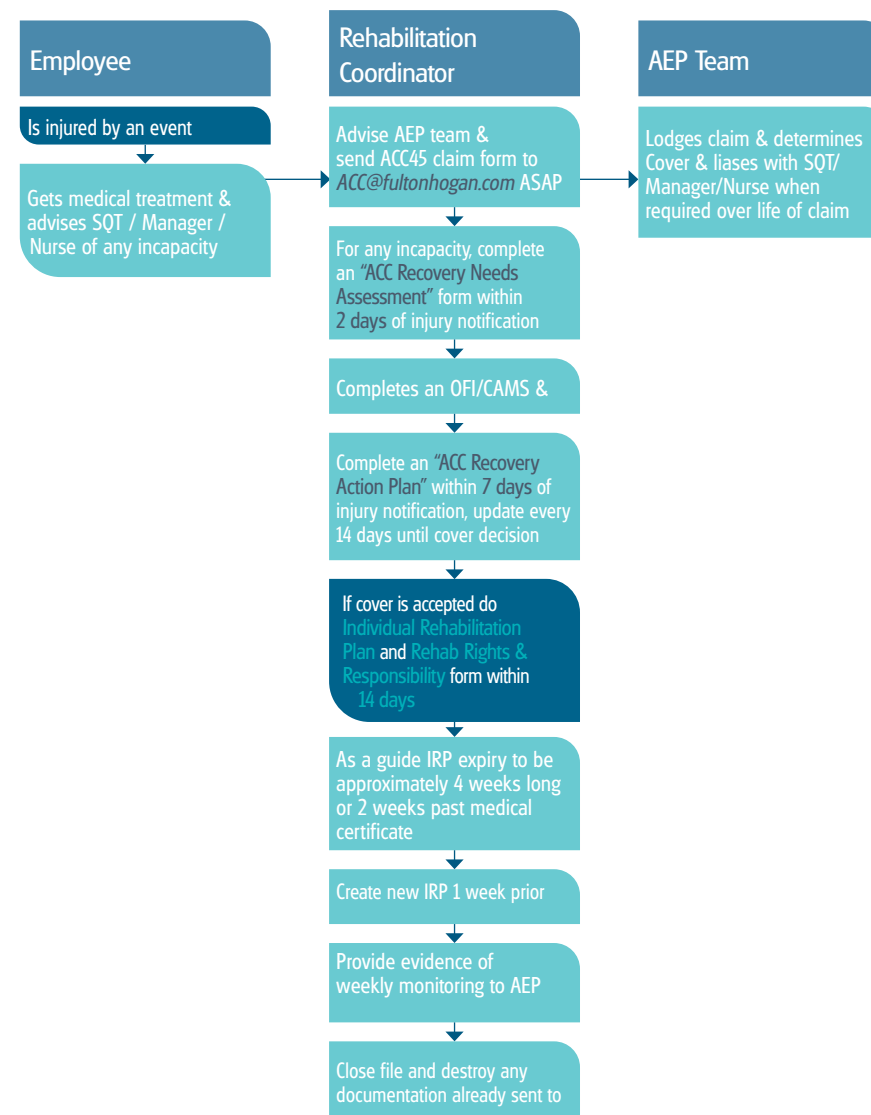
It is important all employees in the Customer Operations Group are treated the same, and receive the same support if they become injured, require rehabilitation or a return to work plan. While we have tried to amalgamate all processes for the Customer Operations Group, under the hood there are some differences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

### 13.1 Work Injury/Ill-health

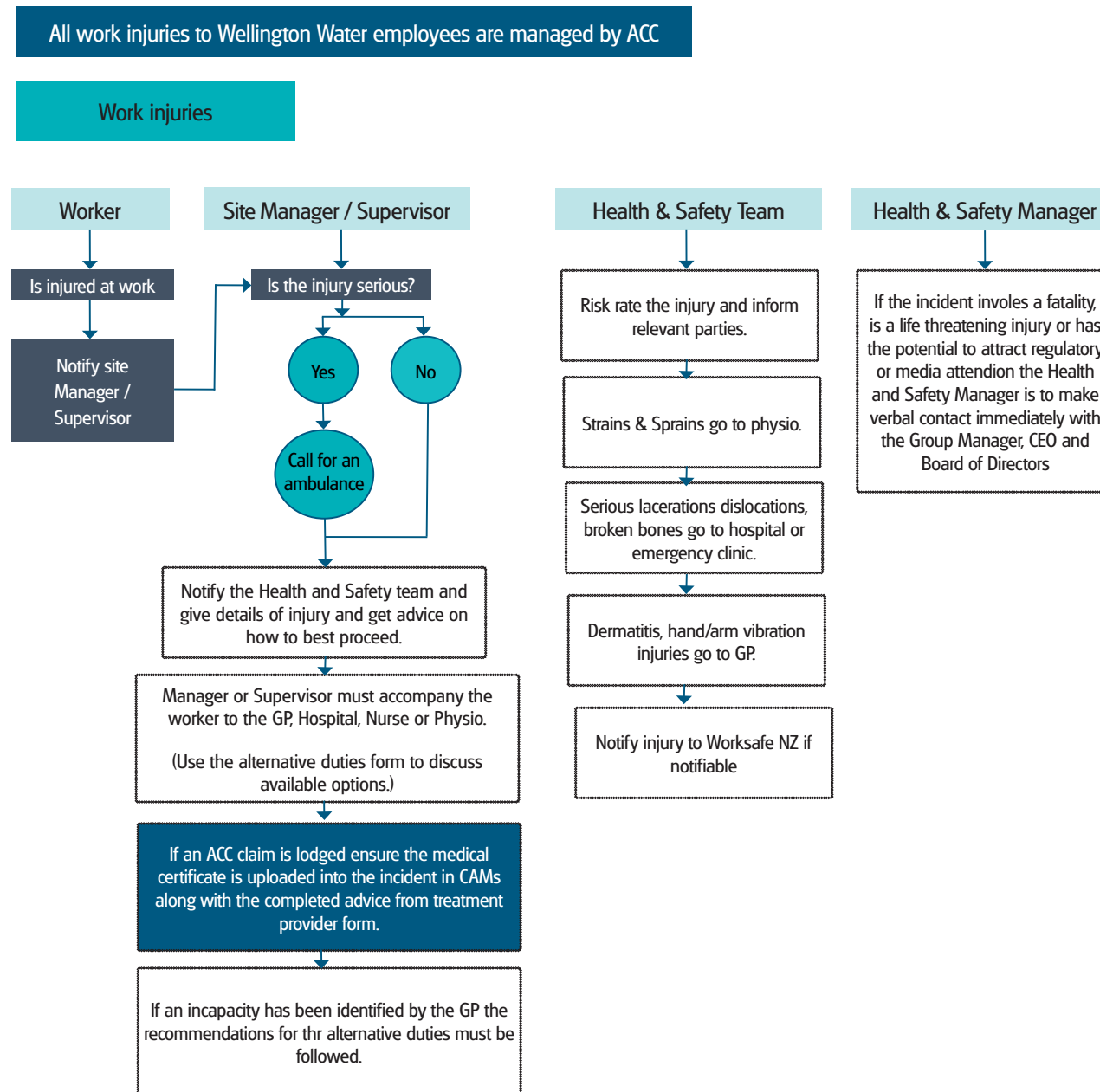
As part of the Customer Operation's role of being a great place to work it is our responsibility to assist our employees with their return to pre-injury function when they have a non-work injury.



#### 13.1.1 FULTON HOGAN ACC CLAIMS FLOW CHART



### 13.1.2 Wellington Water ACC Claims Flow Chart



### 13.2 Non Work Injury/ill Health

This involves co-operating with ACC and/or Gallagher Bassett (for Fulton Hogan Employees) to develop rehabilitation that is effective and meaningful to the employee. This is also, of course, beneficial for the Customer Operations Group 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.

For Fulton Hogan Employees refer to the *Accredited Employer Programme ACC manual* for further details.

### 13.3 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.

## 14. Monitoring

### 14.1 Site Inspections/Audits

Audit schedules should be prepared by each business unit and be risk based. The minimum requirement for an integrated audit is twice per year. The integrated audit tool is available via iAuditor.

### 14.2 Review

Findings from audits should be recorded in CAMs and actions set as required. Audit findings will be reviewed and shared with the wider business.

## 15. Review

### 15.1 H&S Performance

Performance of the COG will be measured monthly and reported to SLT.

### 15.2 H&S 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 work place for all workers. Reviews will also be used to identify opportunities for continual improvement.

### 15.3 H&S Manual Reviews

All workers may suggest improvements to the manual via MyVoice/CAMs or by contacting the National H&S Manager/Wellington Water H&S Manager. It is expected that it will be a living document and the online version may contain more updates than any hard copy. When significant changes are made (either one large or multiple small) the business will be advised that hard copies need updating.

## 15.4 Document Retention

| What we need to keep  | Where it's kept | How long its kept   |
|---|-----------------|---|
| 1. Risk Control Plan & other related documents including: <ul style="list-style-type: none"><li>• Risk Register</li><li>• Permits</li><li>• Plant Prestarts</li><li>• Plant Induction Records</li></ul> | Contract File   | 12 months   |
| 2. Audits & Inspections   | CAMs            | 5 years   |
| 3. Health Monitoring Results  | Securely kept   | <ul style="list-style-type: none"><li>• 30 years unless otherwise specified e.g. hearing, lung-function</li><li>• 40 years for asbestos-related disease monitoring</li><li>• 30 years after employment, or until the worker reaches age 75, (whichever is longer) for radiation exposure e.g. NDM</li></ul> |
| 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   |

\*These timeframes are an indication only, where there are any variances between this list & contractual requirements, the longer retention period applies.



# Topic

## GoTo minimum requirements

## KnowHow videos

| Inform  | Energy   | Health & wellbeing  | Lifting & heights  | Moving plant   | Traffic   | Tech  | Environmental  | Tools & equipment  | Extras  |
|---|--|---|--|--|---|---|--|--|---|
| <p>Welcome to GoTo</p> <p>Risk Control Plan</p> <p>States of Error</p> <p>Notifiable Incident</p> <p>Notifiable Injury or Illness</p> <p>Subcontracted &amp; Hired in Plant</p> <p>Underground Services</p> <p>Covid 19</p> <p>Five Ways to Wellbeing</p> | <p>Lock Out Tag Out Mobile Plant</p> <p>Lock Out Tag Out Fixed Plant</p> <p>Work Near Overhead Lines &amp; Power Poles</p> <p>Underground Services</p> | <p>NEW Asbestos Basics</p> <p>NEW Covid 19</p> <p>NEW Five Ways to Wellbeing</p> <p>States of Error</p> <p>PPE</p> <p>Manual Handling</p> <p>Notifiable Incident</p> <p>Notifiable Injury or Illness</p> <p>Asbestos Pipes &amp; Contaminate Soils</p> <p>Drug &amp; Alcohol Awareness</p> <p>Vibration</p> | <p>Keep Clear of Suspended Loads</p> <p>Ladders</p> <p>Fall Prevention</p>                     | <p>NEW Parking on Slopes</p> <p>Nissan Truck Park Brake</p> <p>Tip Loads Safely</p> <p>Swinging Taildoors</p> <p>Subcontracted &amp; Hired in Plant</p> <p>Rail Corridor Work</p> <p>Compacting Shoulders</p> <p>NEW Danger Zones &amp; Blind Spots</p> <p>Lock Out Tag Out Mobile Plant</p> | <p>Positive Traffic Management</p>  | <p>NEW Nuclear Densometer</p> <p>Temporary Works Basics</p>   | <p>Envirowise</p> <p>Exposure to Noise</p> <p>Exposure to Dust</p> <p>Exposure to RCS</p> <p>Exposure to Fumes</p> | <p>Chainsaws</p> <p>Concrete Saws</p> <p>Grinders</p> <p>Skill Saws</p> <p>Ladders</p> <p>Machine Guarding</p> | <p>NEW Covid 19</p> <p>NEW Nuclear Densometer</p> <p>Rail Corridor Work</p> <p>Temporary Works Basics</p> <p>Using a Subcontractor</p> <p>Demolition Basics</p> |
| <p>KnowHow Intro &amp; Welcome</p> <p>Bird Nest Fires</p> <p>Hydraulic Oil Spill Response</p> <p>The Chill Towel</p>  | <p>Relocating underground services</p> <p>Pneumatic hose Restraints</p>  | <p>Wellbeing Introduction</p> <p>R . U . OK ?</p>   | <p>Approaching a Crane Safely</p> <p>Fixed Scaffolding</p> <p>Gravity Doesn't Discriminate</p> | <p>Exclusion Zones</p> <p>Prestart Basics</p> <p>Taildoor trips</p> <p>Missiles in Cabs</p> <p>Deck Props</p> <p>Load binders</p> <p>Trailer assisted Braking</p> <p>Connecting a Light trailer</p>  | <p>Positive Traffic Management</p> <p>Taper Safety Zone</p> <p>eSTOP Info &amp; Setup</p> <p>Gibney Paddle</p> <p>Performing Road Inspections</p> | <p>eDJR Multiple Videos</p> <p>eTimesheets Multiple Videos</p> <p>Plant Prestart</p> <p>Password Resets</p> | <p>Envirowise</p>  | <p>Power Tools</p> <p>Machine Guarding</p>   | <p>NEW Protecting Your Hands</p>  |

COMING SOON



**GoTo**  
minimum requirements

GoTos' are simple two page step by step documents that explain our minimum requirements while providing one source of truth for our staff and contractors.

Using highly visual learning techniques along with QR code access, GoTos take critical information direct to the field via multiple mobile devices.



**KnowHow**  
videos

watch | learn | understand | remember

KnowHow visually demonstrates standard tasks and procedures in short, easy to stream video clips.

Logging into the KnowHow app allows you to view multiple videos coving most of our high risk activities along with other key topics.





## 16. Appendices

### 16.1 Accountabilities

#### 16.1.1 ALLIANCE LEADERSHIP 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
- ▶ Undertaking leadership safety actions as agreed in annual plans
- ▶ Ensuring the Company maintains all necessary safety accreditations

#### 16.1.2 GROUP MANAGER

- ▶ 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
- ▶ Undertaking leadership safety actions as agreed in annual plans
- ▶ 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)

#### 16.1.3 MANAGER CUSTOMER DELIVERY, SERVICE DELIVERY MANAGERS, TEAM LEADERS

- ▶ 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 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 Leadership Safety Actions in line with agreed targets
- ▶ Reporting incidents, conducting incident investigations and ensuring corrective actions are closed out, communicated and implemented
- ▶ Ensuring appropriate injury management and rehabilitation of injured workers

#### 16.1.4 HEALTH AND SAFETY ADVISOR

- ▶ 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 regulator actions
- ▶ Conducting leadership safety 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
- ▶ Represent the company at appropriate industry forums

#### 16.1.5 WORKPLACE SAFETY COORDINATORS/HSQES TEAM MEMBERS

- ▶ Reviewing the regional/project safety plan and ensure it is implemented
- ▶ Assisting in the development and review of HSQES documentation e.g. safe work method statements
- ▶ Assisting in the development and implementation of inductions, health and safety training, daily/pre start and tool box/tailgate meetings
- ▶ Advising/coaching project/site managers, supervisors, employees and subcontractors on their safety obligations
- ▶ Conducting/assisting investigations and assurance activities (e.g. audit/inspections), ensuring corrective actions are implemented as required
- ▶ Undertake site audit and inspections as per schedule
- ▶ Support line managers to provide appropriate injury management and rehabilitation of injured workers

### 16.1.6 WORKERS

- ▶ 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



## 17. Version Control

| Date              | Version | Brief description of changes made   |
|-------------------|---------|---|
| 2nd February 2021 | 1       | First version released for review and feedback.   |
| 1 May 2021        | 2       | <p>This version has a completely new look and feel colour wise. Small changes to text have been incorporated from feedback from frontline staff as well as some additional text which was derived from the Fulton Hogan Version 4 of the manual.</p> <p>New text and sub-sections:</p> <ul style="list-style-type: none"><li>• Vessels on water - added to the FH fleet requirements table (<a href="#">Section 4 Page 11</a>)</li><li>• Calibration requirements (<a href="#">Section 4.6 Page 14</a>)</li><li>• Installing temporary traffic management (<a href="#">Section 6.2 Page 28</a>)</li><li>• Confined space equipment (<a href="#">Section 6.9 Page 37</a>)</li><li>• Noise exposure limits example tools table added (<a href="#">Section 7.3 Page 47</a>)</li><li>• Chlorine (<a href="#">Section 7.10 Page 51</a>)</li><li>• Lptosiosis (<a href="#">Section 7.14 Page 51</a>)</li><li>• Sub-contractor summary table (<a href="#">Section 8.6 Page 56</a>)</li></ul> <p>There were no major changes to this version of the manual other than the addition of Chlorine.</p> |
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## 17.1 Your Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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This image shows a full page of blank handwriting practice paper. It features multiple sets of horizontal lines spaced evenly down the page. Each set typically consists of three lines: a top blue line, a middle green line, and a bottom red line, providing a guide for letter height and placement. The paper is otherwise completely blank, with no text or markings.

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