HEALTH AND SAFETY MANUAL – TREEWORK AND CHIPPING

INTRODUCTION

It is the policy of the company to create a safe, healthy and enjoyable working environment by providing the systems of work and equipment to achieve this, along with the necessary information, training opportunities and supervision, supported by the attitude and commitment of all sub-contractors.

The Health and Safety manual's purpose is to clearly explain the company's and sub-contractor's obligations under the Health and Safety in Employment Act 1992, and to provide methods to carry out these obligations.

The cost of accidents can be measured in money and productivity losses, but most importantly in physical disability terms and can ultimately affect the survival of the company and job security.

Under the Act the company shall take practical steps to:

- Provide and maintain a safe and healthy working environment ;
- Ensure that machinery and equipment is designed, set up and maintained to be safe ;
- Ensure that sub-contractors and public are not exposed to significant hazards ;
- Provide procedures to deal with emergencies and accidents that may arise in the workplace

The sub-contractors also have responsibility for their own safety and the safety of others by:

- Reporting accidents ;
- Reporting hazards ;
- Following safe work practices ;
- Maintaining good housekeeping

Health and Safety Management is implemented in 3 ways:

1. Provide a system to identify hazards ;
2. Provide practical methods and information to eliminate, control or minimise hazards ;
3. Provide a system to deal with an accident.

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HAZARD IDENTIFICATIONS

Tree work is by nature a dangerous operation and must be carried out be adequately trained and competent personnel with total commitment to safety and concentration during all stages of the job.

Each site must have a site safety manager nominated before any work starts. It will usually be the more senior person, but at times newer workers will be given the position to train them further.

At the commencement of a new job or at the start of each day, and as often as is necessary throughout the day, the site safety manager will, in consultation with all site workers, assess the site, identify any potential hazards and implement necessary measures to eliminate, control or minimise any possibility of an accident. These may include but are not limited to:

- Slipping, tripping, steep, unstable ground?
- Rubble, gravel, seed pods?
- People, pets, property in vicinity – possible damage or harm?
- Power or telephone lines close by?
- If working above ; falling logs or branches ; equipment dropped from above?
- People working too close to other people with chainsaws?
- Possibility of public walking under or near work zone?

The site safety manager may at any time call a "stop work" to urgently discuss a new and temporary hazard or to review a near miss, or to reprimand or take appropriate action if someone is acting in an unsafe manner.

All site workers will report to the site safety manager any new hazard that arises during the course of work and this will be acted upon in consultation with all co-workers.

As the work site is constantly changing, so too are the hazards and a vigilant effort from all members of the company and contractors is required to identify all hazards present.

To further identify hazards there will be a monthly meeting held between the manager and employees to discuss safety and health issues. The meetings will be recorded in the company diary and will be held on the first Monday of every month, and will last one hour. Any items arising will be dealt with by use of the standard OSH hazard control chart contained in this section of the manual.

All sub-contractors must have read and must understand the company health and safety manual and comply with its directions at all times.

HEALTH AND SAFETY MANUAL – TREEWORK AND CHIPPING

OPERATIONS MANUAL

Contents

1.0 GENERAL SAFETY RULES

1.1 The employer shall nominate a competent person to be in charge of each operation. That person shall exercise such supervision to ensure that the work is performed in a safe manner at all times. If it is necessary for the site supervisor to leave the operation, another competent person shall be nominated to take charge.

1.2 The employer shall ensure that all work is performed in a safe manner. All workers shall be properly instructed and trained in the work they are required to perform and the dangers or hazards involved in each operation.

1.3 All workers will be required to acquaint themselves with the relevant safety rules for each operation, and shall take all necessary precautions to ensure their own safety and the safety of others at all times.

1.4 When operations become dangerous due to high winds, wet weather, poor visibility and any other conditions, the employer or supervisor shall suspend all operations while these conditions exist. However, the site must not be abandoned until it is made safe.

1.5 No worker shall work in or visit an arboricultural site while under the influence of drugs or alcohol.

1.6 Before any work is carried out, or any climbing is done, proper inspections of the work area shall be carried out to identify hazards to the worker. Such hazards may be decay or rot, dead branches, suspended materials e.g. branches, interlocking branches or power lines either within or close to the crown. All workers shall be given clear instructions on the work to be done and any hazards involved, to themselves, property or to the public.

1.7 Unless training is being done on a one to one basis, only one person shall be up a tree at any time during tree work. At least two persons shall be employed at any time on tree work.

1.8 No person under the age of 15 shall work in any arboricultural operation.

1.9 All vehicles used in conjunction with an arboricultural operation shall have a current Certificate of Fitness.

1.10 All tree work sites shall be left safe at the end of each work period and at the end of each day.

2.0 MACHINERY

2.1 No machine shall be used unless it is:

2.1.1 properly maintained in a sound and safe condition and inspected at least daily

2.1.2 suitable for the operation in capacity and design

2.1.3 operated by a competent person (or person training under adequate supervision)

2.1.4 where appropriate, equipped with brakes that are capable of holding the machine on any gradient on which it is operated

2.1.5 serviced and operated within the manufacturer's recommendations and specifications

2.2 Operators shall only use machinery and equipment they are trained and authorised to use, unless training under supervision.

2.3 Any person who discovers any defect in any machinery shall report the defect to the person in charge of the operation.

2.4 All defective machinery shall be shut down until repairs are made, the machine is inspected and declared safe before use again.

3.0 PROTECTIVE CLOTHING AND EQUIPMENT

Protective clothing and equipment are provided.

3.1 Protective equipment suitable for the work being performed shall be provided, as required for the use of all workers. It is the responsibility of each sub-contractor to supply their own steel cap safety boots.

3.2 No persons shall interfere with or misuse any equipment provided for their protection and health.

3.3 Any form of loose outer garment such as overcoats, and scarves are potentially dangerous and shall not be worn on site.

3.4 Clothing

The use of the following protective clothing and equipment is required:

3.4.1 All workers using a chainsaw must wear chainsaw trousers or chaps at all times.

3.4.2 Steel-capped footwear must be used at all times when entering operation areas.

3.5 Safety Helmets

3.5.1 Safety helmets must be worn at all times by all persons using a chainsaw and by those on the ground, in or about an arboricultural operation.

3.5.2 All safety helmets shall comply with the requirements of New Zealand Safety Regulations.

3.5.3 Safety helmets for chainsaw operators shall be fitted with earmuffs and have provision for visors.

3.5.4 Safety helmets should be of high visibility colours.

3.5.5 Helmets should be inspected regularly. They shall be replaced if damaged.

3.6 Hearing Protection

3.6.1 Good quality earmuffs are provided for all workers subject to harmful noise. All chainsaw and chipper operators must wear ear protection.

3.6.2 Earmuffs should be regularly inspected and maintained to the highest standard. Any worn or damaged parts shall be replaced where necessary.

3.7 Eye Protection

3.7.1 Visors or safety glasses should be worn where danger from flying debris or excessive dust exists and should be available on request.

3.7.2 Eye protection equipment shall be maintained to the highest standards. Damaged items should be repaired or replaced.

4.0 HAND TOOLS

4.1 All tools used shall be kept in good working condition, be properly sharpened where applicable, and shall be restricted to the use for which they are intended.

4.2 Handles shall be securely and correctly attached to tools. Do not use tools with loose handles. Damaged handles must be replaced.

4.3 Split axe heads, damaged steel wedges, hammers and similar equipment shall be properly repaired or replaced.

4.4 Pole pruners should be provided with guards, or stored carefully to cover the heads when the pruners are not in use.

4.5 Jacksaws should have a guard or pouch equipped with a strap, rope or snap so they can be secured to the worker's belt during work or while changing positions.

4.6 Saws, pruners and other tools should not be carried in the worker's hand while climbing. They should be raised and lowered by tool lines or clipped on to the climbing harness.

4.7 Tool lines should be attached to the end of the tool so that there is less chance of the tool being caught in obstructions when raising or lowering.

4.8 Tools must not be dropped or thrown to the ground in general operations. If it is necessary to drop or throw tools to the ground, a warning should be given and the ground area cleared.

4.9 All tools shall be removed from a tree when the worker has finished the task, or when a crew is finished for the day.

5.0 FIRST AID

5.1 A first aid kit or box must be kept in each vehicle and at each work area.

5.2 Every box must be kept fully stocked, and should be stored so as to ensure that the contents are protected against contamination by dust, heat, moisture or any other source.

5.3 Where operations involve a number of people, first aid treatment for the injured shall be in the hands of a person who (by training or experience) is the most qualified to do so.

5.4 No seriously injured person shall be moved until the most qualified first aider present has made a careful assessment of the extent of the injuries. If it appears to the person making the examination that there is a risk of complication of the injury, the patient shall be made as comfortable as possible until qualified medical advice is available.

6.0 ACCIDENT REPORTING, RECORDING, INVESTIGATION

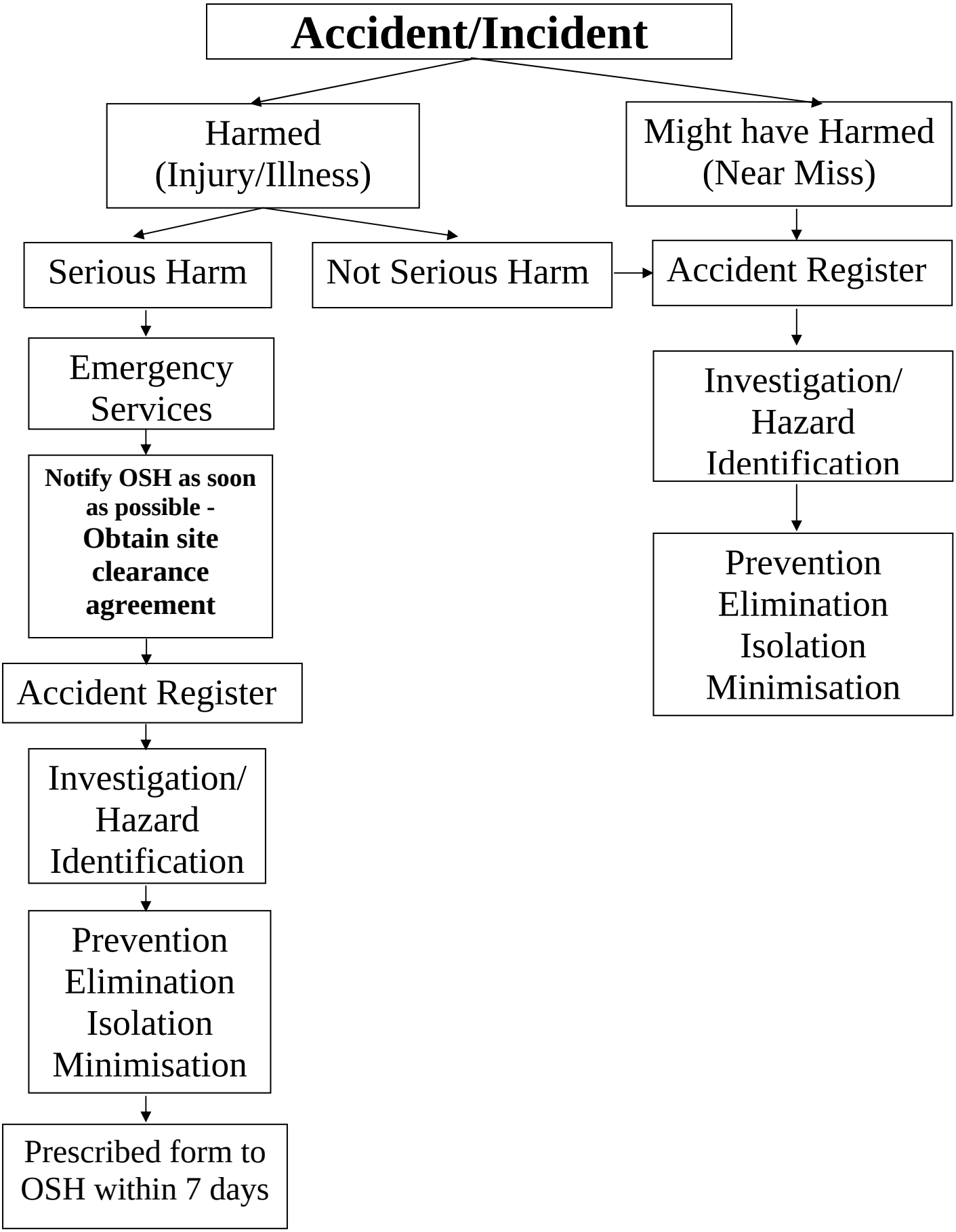
The Health and Safety Employment Act 1992 requires the manager to record and investigate all accidents or near misses in the workplace, and to report to OSH all accidents involving serious harm.

The most important reason for this is to identify the cause of the accident so that it can be prevented in the future.

The manager will hold in the company office an accident register to record any accidents or near misses so that they can be acted upon in accordance with the OSH investigation flow chart contained in this manual. All reporting and action will be carried out using the standard OSH investigation and reporting forms contained in the accident register.

Familiarise yourself with the flow chart on the next page. This shows what must happen immediately after any accident or near miss.

After an Accident or Near Miss has happened:



An Approach to Accident Investigation

1 Who should investigate?

- Only people with the appropriate skills and experience should investigate accidents
- If there was serious harm or the potential for it, and there is a likelihood of a recurrence, a group approach to investigation could be justified. It will bring a range of skills and perspectives to bear

2 Gather all the facts

- What happened? Interview witnesses and describe events in detail, using any photos, diagrams or other exhibits that may be appropriate
- Has the prescribed accident report been completed and OSH, or other agencies been informed?
- Be sure you understand the sequence of events fully before any analysis takes place

3 Identify all the hazards involved

- Identify all the hazards involved. Consider: Equipment, materials, etc. ; Work practices and procedures ; The work environment ; Health issues

- Are any hazards significant i.e. likely to cause ***serious harm?***

4 Assess the hazard controls in place

- What controls were in place, and why didn't they work?
- What is needed?
- Is there a need to train or inform employees?

5 Decide on future action

- Describe fully what needs to be done to prevent further accidents or incidents
- Who should do what, and by when?

6 Inform all those affected

- Inform everyone who needs to know, not only those directly involved
- This is likely to involve circulating your report, or a summary of its findings

7 Follow up

- There must be checks to ensure that recommended changes have been made and results achieved
- This relies on measures being in place to ensure people are accountable for their actions, or lack of actions

Hazard Identification/Hazard Controls

Workplace/Location:

Hazard	Potential Harm	Significant hazard Yes/No	Eliminate	Isolate	Minimise	Action Proposed	Completion date/signed	Frequency of monitoring

7.0 STORAGE OF PETROL AND OTHER FLAMMABLE LIQUIDS

Petrol and other flammable liquids shall be conveyed, stored and packed in containers that comply with the requirements prescribed under the Dangerous Goods Act 1974.

Containers carrying petrol and other flammable liquids shall:

7.1 be made of metal or other approved materials.

7.2 be of such construction that the contents cannot escape in either liquid or vapour form.

7.3 not be carried or stored in the same compartment of a vehicle which is being used or which is used for transporting personnel.

7.4 be secured in a properly constructed and vented compartment separate from that used to carry passengers. Such a compartment shall be accessible only from the exterior and be vented to the exterior.

7.5 not be mounted to or protruding over the front or rear bumper of any vehicle.

8.0 FIRES

8.1 Always obtain a permit from the local fire authority.

8.2 As a guideline, the following clothes are suitable as a minimum dress standard:

8.2.1 lace up boots

8.2.2 headwear: either a safety helmet or woollen cap, hat, beret or similar headwear

8.2.3 heavy cuffless trousers and long-sleeved shirt (woollen or wool-based are preferable)

8.3 Avoid wearing nylon or synthetic clothing, shorts or singlet with no shirt.

8.4 Do not use petrol to start a fire or as an accelerant.

8.5 Ensure that fires are not lit under or near overhead power lines as electrical discharge through smoke may occur.

8.6 Avoid smoke drift across roads, pathways or buildings by using favourable wind direction.

8.7 Make sure fires are extinguished and ashes cold at the end of the day's work.

9.0 OVERHEAD POWER LINES

9.1 Electrical Supply Regulations and the Electrical Code of Practice require that persons working with hand tools or ladders, and owners or operators of any machine working in proximity to live power lines, shall keep the tools or ladders or any part of the machine at least 4 metres away until advice has been received from the Electrical Supply Authority as to the safe working distance from that particular line.

9.2 All machinery likely to be used at any time in the proximity of overhead power lines shall display, in a prominent place, an approved warning notice regarding working near overhead power lines.

9.3 Before working in the vicinity of power lines, inspect the tree to be climbed or worked to determine if there are wires passing through the tree or in proximity of it.

If there is any doubt about safe working distances, obtain advice from the local power authority. The power lines may have to be de-energised before work commences.

9.4 When working in the vicinity of power lines, particular care must be taken with metal ladders, pruners and hand tools. Do not approach within 4 metres of any live power line until the Supply Authority has confirmed voltages.

9.5 Take particular care with trees or branches that may fall on to live power lines. If necessary, use ropes to ensure that the parts of the tree being removed fall away from power lines.

10.0 UNDERGROUND SERVICES

10.1 If work involved stump grinding or removal, the appropriate authority shall be contacted if there is any doubt to the location of any water main, sewage pipe, storm water, telecommunication, gas or power lines.

11.0 PUBLIC SAFETY

11.1 Where the public have access to any operation, a sufficient area shall be designated as the work area and be marked prior to starting work by the erection of warning signs or barricading or roping off. If there is still risk of injury to the public, one person should remain to supervise these precautions.

11.2 Branches and debris should be thrown or lowered, where applicable, away from any street and footpath, if possible. Otherwise the material should be removed immediately.

11.3 Tools and equipment should be kept off footpaths and roads and remain within the designated work area.

11.4 **Work Near Public Roads**

11.4.1 Trees within two tree lengths of road and rail traffic shall not be felled unless suitable precautions have been taken to warn oncoming traffic. Such precautions shall include the posting of warning signs and where necessary the placement of a flagperson or flagpersons at appropriate safe positions.

11.4.2 Where work necessitates the closing or partial closing of a road, the above precautions are to be taken and compliance is required with any additional conditions laid down by the local road controlling authority.

12.0 TRAFFIC MANAGEMENT

12.1 In the event of tree work or machinery being located in close proximity to a public road, a Traffic Management Plan may have to be implemented.

12.2 Put forward application to OPUS International Consultants

12.3 Establish works procedure

12.4 Set site to Transit New Zealand guidelines

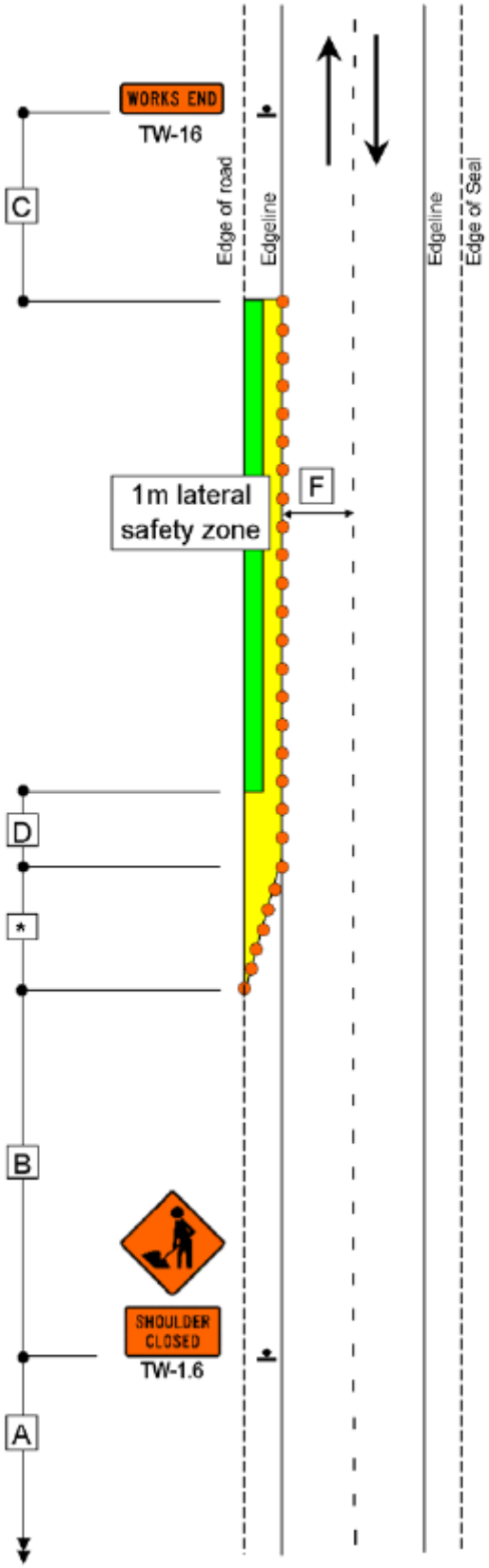
12.5 Use of appropriate signage, cones etc

12.6 If required, contract independent road control company

12.7 Monitor site to ensure that signage is highly visible at all times

12.8 Ensure that traffic is impeded / restricted for a short a time as possible

12.9 All staff trained in Traffic Management and wearing high visibility safety equipment e.g. day-glo vest



Key

Working Area

Safety Zone

Cone

SIGN NUMBERING REFERS TO MOTSAM AS AT 1 SEPT 2002

Taper Formula

* Taper Length = $\frac{W}{3.5} \times G$

W = Width of Shoulder

G = Taper length in metres from Table C2.2 for Permanent/Temporary speed limit

13.0 CHAINSAW SAFETY

13.1 Operators should not use defective chainsaws, tools or protective equipment until they are restored to a safe condition.

13.2 All chainsaws held directly by hand shall have at least one of the following securely attached in place and in good working order before it is used:

13.2.1 a safety mitt ; or

13.2.2 a rigid-type hand guard ; or

13.2.3 a chain brake

13.3 The chainsaw shall be inspected before work is begun to ensure it is in safe working condition.

13.4 No cleaning, re-fueling, oiling or adjustments shall be carried out while the motor is running.

13.5 All operations relevant to tensioning the saw chain and any other maintenance shall be carried out only by a trained person in a safe manner and to the manufacturer's specifications or recommendations.

13.6 **Starting the Chainsaw**

13.6.1 A chainsaw motor shall only be started when it is clear of all obstructions or people.

13.6.2 Approved starting methods are:

13.6.3 Starting a chainsaw on clear ground.

13.6.4 Starting a chainsaw over a log.

13.6.5 Step over method for warm starting. The throttle lockout should not be used when using (a) and (b) above.

13.6.7 Drop starting a chainsaw is prohibited.

13.7 **Chainsaw Operation**

13.7.1 Operators shall use all protective equipment appliances or other means provided to afford protection and safeguard health.

13.7.2 Operators shall not operate or carry a chainsaw in a manner likely to endanger themselves or others.

13.7.3 A chainsaw shall not be used if:

(a) the saw chain does not remain stationary when the motor is idling ;

(b) the cutter bar, handles or control levers are loose ;

(c) any parts are damaged, missing or ineffective or ;

(d) the saw will not idle correctly.

13.7.4 Operators shall ensure that, where practicable:

(a) all obstructions in the path of the chainsaw are removed before cutting operations begin ;

(b) a good footing and safe, comfortable balanced working position are maintained ;

(c) during operations the chainsaw is held firmly with both hands, with the handles cradled between the thumbs and fingers and mitt used (if fitted) ;

(d) they watch what and where they are cutting and ;

(e) they avoid overreaching with the chainsaw.

13.7.5 Operators must pay particular attention to the dangers of carbon monoxide poisoning when working in confined spaces or where exhaust fumes cannot disperse properly.

13.7.6 Except for short unobstructed distances, the chainsaw motor shall be stopped while being carried by hand, or the chainbrake activated.

13.7.7 To reduce the possibility of kickback and vibration, and to ensure smooth cutting, the manufacturer's instructions for sharpening and maintaining the saw chain shall be adhered to.

13.7.8 The chainsaw should always be carried at the side of the body with the bar pointing to the rear, so it can be thrown clear in case of a fall. It must not be carried on the shoulder.

13.7.9 When a chainsaw is operated above shoulder height, care must be taken to ensure no part of the body is at risk from kickback or follow through from the saw cut.

13.8 Refueling the Chainsaw

The following rules shall be followed when refueling:

13.8.1 Stop the motor.

13.8.2 Place the saw on clear ground but not on a customers path or driveway, or any manicured lawn. Fill the oil tank first to allow the saw to cool down.

13.8.3 Avoid spilling fuel on hot engine components, as excessive heat can cause ignition.

13.8.4 Do not smoke or have any sparking or open flame near the fuelling point.

13.8.5 When completed, wipe excess fuel from the saw.

13.8.6 Move at least 3 metres away from the refueling site before restarting.

13.9 Reduction of Vibration Disease

The following points should be observed to control the hazard of vibration disease:

13.9.1 Maintain and check the fastness of all anti-vibration mounts, absorber, the guide bar and chainsaw body parts.

13.9.2 Maintain the correct low and high speed carburetor adjustments.

13.9.3 Maintain a firm but not rigid grip of the chainsaw handles.

13.9.4 Maintain warm hands.

13.9.5 Maintain depth gauge settings and chain sharpening to the manufacturer's recommendations.

13.10 Use of Chainsaws Above Ground

13.10.1 No person shall use a chainsaw for tree work unless they have fully demonstrated their competence and practical knowledge in chainsaw operation and tree climbing.

13.10.2 As a guide, the person should have reached the level of competency in climbing and chainsaw use equivalent to the Certificate in Arboriculture.

13.10.3 All training in the use of chainsaws above ground shall be given on a one-to-one basis.

13.10.4 Where applicable, chainsaws should be a light-weight type, fitted with a top control handle to give good balance and not exceeding the cc rating required for the job in hand.

13.10.5 The bar length should be kept to the minimum required for the work to be carried out.

13.10.6 Where it is necessary to use a large chainsaw because of branch or trunk size, the operator must be in a stable position so that the chainsaw can be operated with both hands. To aid stability and assist control, large saws should be supported by a rope running to a higher point in the tree.

13.10.7 Warm up the chainsaw on the ground for ease of starting when in the tree.

13.10.8 Before operating the saw, get securely positioned at or above the level of the cut where practicable.

13.10.9 Attach the saw to the climbing harness by means of a strop for general use but not if there is danger of the chainsaw being trapped and taken with the severed section.

13.10.10 Start the chainsaw by supporting on a branch, or if this is not possible, position the saw on the other side of the trunk or branch or get in a safe and stable position. Hold the saw with a straight left arm and start with short sharp pulls of the starter cord. Start the saw with the chainbrake on.

13.10.11 If in making a cut, the operator has no suitable backrest or something to lean on, they should be secured, if possible, by two anchor points. Footing should be secure on branches or climbing spikes where practicable.

13.10.12 Generally, the saw should be operated using two hands. However, in some circumstances e.g. cutting ends of long lateral branches, the operator may for safety or feasibility, hold the saw in one hand to make the cut.

13.10.13 Stop the saw or activate the chainbrake while changing working positions.

13.10.14 Minor adjustments to the saw may be made in a tree. A major malfunction necessitates lowering the saw to the ground person or returning to the ground to carry out repairs.

14.0 CLIMBING

14.1 Persons climbing shall be competent and fully trained in the use of climbing equipment.

14.2 At least two persons must be employed when climbing is being carried out.

14.3 Working techniques and progression shall be fully discussed and understood by ground staff before climbing commences. Rescue procedures shall be outlined and understood where appropriate.

14.4 Effective communication must be maintained with the climber. Noisy machines that effect communication must be either shut down or moved away. Helmets with build-in radios are a possible alternative.

14.5 The climber shall be securely attached to a suitable anchor point at all times by means of climbing rope, slings or safety line. The anchor lines should be kept taut at all times and secured around the main stem or branch.

14.6 Anchor points shall be sufficient to take the climber's weight. Be aware that some trees are more brittle than others, e.g. poplars, willows, previously cut silver dollars and select the appropriate diameter. Do not rope into dead branches.

14.7 Whenever the working position is changed, the climbing rope should be re-routed to ensure the free end has a straight fall to the ground. The ground person shall ensure that the tope is free of knots and kinks.

14.8 When climbing, the safety strap is never unclipped except to bypass branches too heavy to break off. A second safety strap or line should be fastened free of the obstructive branch before the first strap is unclipped.

14.9 Supplementary anchor points shall be used where a fall or swing that may cause injury is possible.

14.10 Knots should be untied and never slipped off carabiners.

14.11 When descending, ensure that the tope is as straight as possible and use both hands to control a smooth descent.

15.0 CLIMBING EQUIPMENT

15.1 All climbing equipment shall be of the highest quality and comply with the New Zealand Standard where applicable.

15.2 Climbing equipment must not be used for any other purpose and must be replaced if worn, damaged or inoperative.

15.3 All equipment must be used in compliance with the manufacturer's conditions or instructions.

15.4 **Ropes**

15.4.1 Nylon climbing ropes must be a minimum of 12mm in diameter.

15.4.2 All climbing ropes shall be free of joining splices. Spliced eyes are to have the rope end tucked at least four times. Rope ends should be secured to prevent unraveling.

15.4.3 Never use a climbing rope for any other purpose.

15.4.4 When coiling ropes, do so with the lay of the rope to avoid kinking. Remove any kinks as they occur by working free to the end as the rope is gathered.

15.4.5 Provide a suitable bag or box or hang up climbing ropes to avoid contact with harmful substances or damage while being transported.

15.4.6 When descending with a figure 8, carabiner hitch or other descender, the rope should not be allowed to slip too rapidly as friction may burn and weaken the rope.

15.4.7 When ropes are run through crutches, over branches or against bark, they should be moved slowly to avoid friction. Avoid tight crutches.

15.4.8 The working breaking strength of a rope is determined by the knots used to fasten it. Knots must be simple, easily tied and readily untied. The same knots must be used by climber and ground personnel to avoid confusion. Rope ends of knots should be at least 50mm long.

15.4.9 Check ropes daily for damage before use. Pay particular attention to cuts or sheath damage, as these can be an indicator of damage to the core. Run ropes through your hands to detect damage.

15.4.10 Replace a climbing rope when:

(a) It has been damaged mechanically ;

(b) It has held a severe fall ;

(c) It has come into contact with petrol, diesel, grease or acids ;

(d) It is older than five years.

15.4.11 Store ropes coiled and hung in a cool and dry place away from sunlight. Provide protection to avoid contact with harmful substances.

15.4.12 Wet ropes should be hung in a shady place to dry.

15.4.13 Dirty ropes should be washed and cleaned in lukewarm water using a gentle detergent, rinsed well and hung to dry in a shady place.

15.5 Safety Rules

15.5.1 The most suitable belt for tree work combines a saddle with a waist or body belt, which minimises fatigue and allows free movement.

15.5.2 Before use, belts must be checked to ensure that webbing, leather and rivets are in good condition and secured, and rings and clips are free from defects or damage.

15.5.3 Leather belts should be cleaned with saddle soap and dressed with dubbin after use. Webbing belts can be cleaned by washing in mild detergent, rinsing and hanging to dry.

15.5.4 Safety belts should be kept in compartments or suitable containers while being transported to avoid harmful substances or damage.

15.5.5 Safety belts should be stored by hanging on hooks or pegs in a dry place away from excessive heat or sunlight.

15.6 Tree Climbing Spurs

15.6.1 All tree-climbing spurs shall be manufactured from best quality materials by competent tradespeople.

15.6.2 Spurs shall be inspected before use for fractures or hairline cracks in the metal portions ; misshapen, bent or loose spikes ; cut or worn straps ; pulled rivets and damaged or worn buckles, rings and pins.

15.6.3 Spikes should be kept properly sharpened, avoiding needle points or reducing the cross-sectional area by over-filing.

15.6.4 Spurs should be firmly strapped to the climber’s feet and legs, with the tope of the shank fitting firmly and comfortably to the calf just below the knee.

15.6.5 The climber must ensure that when climbing the tree, the spikes are set at sufficient angle to the stem to prevent the slipping or gouging of the bark.

15.6.6 If spurs are removed while working up a tree, they should be lowered to the ground to avoid damage to the spikes or danger to ground personnel.

15.6.7 Climbing spurs should be worn only when needed and must not be worn when working on the ground, walking or riding in vehicles.

15.6.8 A suitable box or container should be provided for the transportation and storage of tree climbing spurs. The spikes should be covered to prevent damage to the points and avoid injury in handling or damage to other equipment. Straps and pads require regular maintenance to keep them soft and pliable.

16.0 LADDERS

Improper use of ladders is a major work hazard. The most common causes of accidents are ascending or descending improperly, failure to secure the ladder, holding objects while ascending or descending, extending oneself too far and taking risks, or structural failure of the ladder.

Extension Ladders

16.1 Ladders made of metal or other electrically conductive materials shall not be used in the vicinity of power lines.

16.2 Ladders should be inspected regularly for loose or cracked rungs or stiles. Make sure nuts and bolts are tight, locks work correctly, extension locks work as intended and rope and other accessories are properly fixed and in good condition. Lubricate any moving parts.

16.3 Whenever practicable, erect the ladder against the trunk rather than the branches of a tree.

16.4 Ensure that both stiles are firm and as level as possible, both on the ground and at the top. If work is going to be carried out from the ladder or repeated climbing or long use is envisaged, it must be secured at the top.

16.5 When using ladders on concrete or metal surfaces, make sure that non-slip feet or a stabilising base is fitted. If the base cannot be adequately secured, a person must hold the ladder to prevent movement of the bottom, or the ladder secured by a rope at the base.

16.6 Leaning ladders must be positioned in a safe manner. As a general guide, the distance from the ladder base to vertical support should be one quarter of the working length of the ladder.

16.7 The unsupported part of the ladder must not touch any obstructions.

16.8 With extension ladders ensure that:

16.8.1 Ladders with less than 18 rungs per section have at least two rungs overlap

16.8.2 Ladders with 18 rungs or more per section have at least three rungs overlap

16.9 Always remove an extended ladder from a tree either with a helper or by lowering using a rope tied to the top of the ladder and passed over a branch or through a short strop and pulley.

16.10 Always face the ladder and use both hands to hold on during ascent and descent.

16.11 Do not allow more than one person on a ladder at any one time.

16.12 Do not overreach when working from a ladder.

16.13 Do not use ladders as bridges or inclined planes to load or handle logs or other materials.

16.14 Do not step from one ladder to another.

16.15 Never walk a ladder while standing on a ladder.

16.16 Never use temporary supports to increase the length of a ladder or fasten ladders together to increase their length unless expressly designed for the purpose.

Fold Out Ladders

16.17.1 Before climbing, both side braces must be in use, and all four feet firmly and evenly placed on the ground.

16.17.2 You must never climb on to the top, or the next rung down as you will inevitably fall sooner or later. The only exception is on a perfectly flat surface, with a second person bracing the ladder with both arms, from the side.

16.17.3 When folding out to full extension, the lock tab must be in place before climbing.

16.17.4 Both feet must be firmly secured on a level surface. If the feet are on a smooth surface and there is a danger of movement, a second person must secure the feet from moving, with their own feet, and if possible, brace the ladder with their hands.

Sectional Ladders

16.18.1 Sectional ladders should be tested for good fit before a climb is commenced and be numbered to maintain order.

16.18.2 Each section of sectional ladders should be secured around the tree by chain and a suitable catch provided to ensure tightness at all times.

16.18.3 Sectional ladders shall not exceed 3 metres in length per section.

Ancillary Equipment

16.19.1 All carabiners, descenders/ascenders, rings, strops and other ancillary equipment used in climbing operations shall be proof tested to a 2200kg rating and marked with this information and the safe working load.

16.19.2 Always use equipment to manufacturer's instructions.

16.19.3 Maintain equipment by keeping it clean at all times. Carabiner locking screw and hinges should be oiled occasionally to ensure their free operation.

17.0 TREE PRUNING

17.1 Generally, in a climbing situation, the operator should be positioned above the branch to be removed.

17.2 Where there is a likelihood of the branch kicking back or striking the operator, the operator should move to a safe position prior to the severing cut.

17.3 Heavy branches should be removed in sections and lowered with ropes. To avoid tearing and damage to the tree or danger to the operator, the final cut should be undercut.

17.4 Generally, two ropes are sufficient for guiding and lowering large branches. One tope is tied to the branch and passed over an anchor as directly above as possible. The rope is then tied off or held by a ground person. A pulling off rope is attached further out on the branch.

17.5 Three ropes may be necessary for larger branches. Butt and top ropes hold the branch until it is cut and ready to be lowered. The third rope is used as a guide rope to control the branch and bring it to the desired position.

17.6 Under no circumstances shall partially cut branches be allowed to remain overnight. If work is not completed at breaks or at lunch breaks, the danger area below the branch must be treated as dangerous, and cordoned off and monitored at all times until safe.

17.7 **Bowsaws**

17.7.1 Always keep blades properly sharpened and tensioned.

17.7.2 The free hand should be held above the level of the branch being cut.

17.7.3 To prevent the saw from falling, it should be provided with a strap or tie rope and secured to the worker's belt.

17.7.4 Saws should have a suitable guard with a snap so they can be held by a ring on the worker's belt during work or when changing positions up a tree.

17.8 **Pole Pruners**

17.8.1 When pole pruning, the operator should wear a safety helmet with a suitable chin strap or combination ear muffs which hold the helmet firmly in position.

17.8.2 Workers must be at least 1.5 pole lengths apart while working.

17.8.3 Never stand directly under limbs being pruned and stand upwind to avoid windblown sawdust.

17.8.4 If raising or lowering pole pruners for tree work, attach the rope to the end of the tool so it is less likely to be caught in branches.

17.8.5 When raising or lowering pole pruners with cutting jaws, the rope must be attached below the cutting jaws and not tied to or run through the jaws to eliminate cutting off the rope.

17.8.6 Always carry pole pruners with the saw or jaws pointing forward and walk at least 1.5 times the pole length away from other workers.

18.0 TREE FELLING

Preparation for tree felling:

18.1 All felling operations shall be under the direct control of a competent person fully experienced in the kind of work to be undertaken. The person in charge of felling operations shall exercise control and supervision of the work to ensure adequate safety precautions are being observed.

18.2 Special care should be taken when felling dead trees, as parts may fall into the work areas as the tree falls.

18.3 Before felling commences, a careful check shall be made to ensure that there is no danger that dead material, branches or dead tops may be dislodged and fall into the work area. If required, an observer should be present to warn the feller of any danger.

18.4 Provide an adequate workspace and a clear escape route. The escape route shall be diagonally to the rear at approximately 135° from the direction of fall. If this is not possible, it shall be as close as practicable to the diagonal and to the side and rear.

18.5 The escape route shall be kept clear of tools and other material that would impede a quick exit.

18.6 Particular care should be taken when felling uphill as this creates extra hazards with trees likely to roll or slide back towards the operator.

18.7 People not assisting with the felling operation, unless supervising under training, training others or authorised by the person in charge, shall remain at a safe distance of at least twice the length of the tallest tree being felled. On steep slopes this distance shall be, if necessary, increased to suit the circumstances. Fellers and feller observers shall ensure that this safety area is maintained.

18.8 Every feller should have with them either:

18.8.1 At least two wedges suitable for the size of trees being felled and a suitable tool for driving those wedges or ;

18.8.2 For smaller trees, a felling lever or some other felling tool suitable for the size of the trees being felled.

18.9 No person shall move forward within two tree lengths of the intended direction of fall of any hung up or cut up tree, or the direction of fall of any hung up tree.

18.10 No machine shall operate within two tree lengths of any felling operation while felling is in progress, or forward of any hung up or cut up tree, unless to assist, under adequate supervision, in safely bringing the tree to the ground.

18.11 Trees that are within two tree lengths of road and rail traffic shall not be felled unless suitable precautions have been taken to warn oncoming traffic. Such precautions shall include the posting of warning signs and where necessary, the placement of a flagperson or flagpeople at appropriate safe positions.

19.0 SECTION FELLING

This operation involves the removal of trees by manageable sections where the situation does not allow felling by conventional techniques.

19.1 No person shall carry out section felling unless they have fully demonstrated their competence and knowledge of section felling techniques.

19.2 Clear communication between climber and ground staff must be maintained to ensure an understanding of what is happening or what is required at any given time.

19.3 The climber must ensure a safe working position is adopted prior to any cuts being made.

19.4 In roping down and slinging, the weight of sections to be removed should be carefully assessed to ensure the selected ropes have the capacity to adequately cope with the initial fall and consequent retention of the section.

19.5 When lowering sections by rope, it is important to control descent by using appropriate anchor points to act as friction devices if required. Provision must be made to avoid damage to the bark and cambium where other trees are used for this purpose.

19.6 Where sections are to be removed by hand, they should be under the control of the operator before their descent to the ground.

20.0 CHIPPER OPERATION

20.1 Operators must be appropriately dressed with:

20.1.1 no loose clothing or jewellery ;

20.1.2 approved ear protection ;

20.1.3 eye protection

20.2 The following start procedure for the chipper must always be followed:

Check: Fuel level
That oil level is full
Throttle at idle
Chipper blades are free to turn

Warm up for 5 minutes at idle. Only when engine warmed, then move throttle to maximum revs.

After use, warm down engine at idle for 5 minutes before shutting down.

20.3 **Chipper Feeding**

20.3.1 Only operators who:

(a) have been fully trained

(b) initially operated the machine under supervision for as long as necessary

(c) shown competence in all aspects of careful and safe operation

are to operate the machine.

20.3.2 Ensure the public is excluded from the work area.

20.3.3 Stand beside the chute to feed. Beware of chips spitting back.

20.3.4 Do not place arms inside chute. Use a piece of branch to push loose or jammed material. **N.B.** If an arm is drawn into the chute, the handle across the top when pushed, reverses the feed rollers.

20.3.5 Do **not** feed with your feet – EVER!

20.3.6 Feed clean material only – no roots, or branches contaminated with dirt. Do not overload the machine. Cut heavy branches to shorter lengths. Allow the engine to pick up before the next branch is fed in.

20.3.7 Do not leave the machine running unattended.

20.3.8 Follow engine shut down procedures prior to clearing any blockages.

20.3.9 If the machine noise changes, investigate the cause urgently, before damage to machinery or people occurs.