Meeting with Mins O'Connor, Nash and Wood re. improving Health and Safety Regulations for plant, structure and working at heights – 13 April 2021

What are the key regulatory proposals?

The key proposals are to:

- provide and maintain safe workplace plant and structures, with extra protections through registration and inspection of the highest risk plant, such as boilers and cranes;
- provide for the safety of operators of mobile plant (such as tractors, quad bikes and forklifts) and passengers, through a suitable combination of safety devices flexible for the circumstances (such as roll-over and crush protection, seatbelts and helmets), and safe operating methods;
- design, manufacture, import, and supply plant and structures that are safe for use in New Zealand workplaces, by providing critical safety information and taking action to address identified risks early on in the supply chain; and
- ensure safe work at height and on excavations through risk management processes that are proportionate to the risk and harm.

The proposals are based on the Australian Model Work Health and Safety Regulations. A summary of the proposals is attached as **Appendix One**.

MBIE estimate the proposals will reduce New Zealand's work-related fatalities and serious injuries by approximately 20 percent, equating to benefits of approximately $43 million per annum in lives saved.

What are the likely implications for the agriculture sector?

There is a high level of use of mobile plant (quad bikes, tractors, side-by-side vehicles) in the agriculture sector.

Current regulations exclude many types of mobile plant from the requirement to have seat belts and roll-over protection,

There are a number of proposals relating specifically to mobile plant. Key for the agriculture sector would be the requirement to ensure mobile plant are fitted with a suitable combination of devices (such as roll-over and crush protection, seatbelts and helmets) to protect the operator.

If this change is agreed, this would result in significant costs for those in the agriculture sector who would need to upgrade their capital equipment.

While in broad agreement with the suite of proposed changes, Federated Farmers opposed the removal of current regulatory exclusions (such as those applying to quad bikes and other plant under 700 kg) from requirements for roll-over protection and seatbelts during public consultation.

Horticulture NZ and the Agricultural Leaders' Health and Safety Action Group supported the removal of current exclusions for mobile plant.

MBIE propose a phased approach over three years to implement these changes in order to moderate the impact. However, the majority of changes are planned to be in place within 18 months, including for protections to be added to mobile plant.

What are the likely implications for the forestry sector?

The forestry sector is likely to most impacted by proposed changes to requirements for high-risk plant due to the sectors use of steep slope harvesting equipment and lifting plant. MBIE proposes extending existing inspection and accreditation processes to include new types of high-risk plant, including steep slope harvesting equipment.

Under the proposals, high-risk plant would be required to be:

- of a registered design and registered as an item of plant with WorkSafe
- regularly inspected by a qualified person, to ensure improved maintenance and replacement of worn plants before they fail
- reported to WorkSafe if there is a near-miss incident, to enable WorkSafe to identify patterns of risk and potential harm.

During public consultation, the Forestry Industry Safety Council (FISC) opposed the proposed designation of steep slope harvesting equipment as high-risk plant. The Council were strongly of the view that non-regulated, self-managed processes using competent persons and risk-focused inspections achieves the same outcomes that are being sought by proposed regulation.

What is MPI's view on the proposals? (MBIE paper notes that MPI is neutral on this)

New Zealand's rate of work-related acute fatalities is high by international standards and it is clear that plant and structures are associated with a high proportion of the serious work-related injuries and fatalities in the primary sector.

Free and frank opinions

Next steps

Minister Wood is currently consulting with Ministerial colleagues on the proposed changes.

Should Cabinet agree to the proposals, an exposure draft will be released. MBIE intends to consult further with rural communities, Federated Farmers, other agriculture peak bodies and forestry sector groups throughout the exposure draft stage. MPI supports this approach to achieve the best regulatory outcomes.

Appendices

Appendix One: Summary of HSW Regulatory Reform: Plant and Structures – proposals

Appendix Two: Cabinet paper (for Ministerial consultation)

Appendix Three: MBIE aide memoire

Appendix Four: Federated Farmers submission

Appendix Five: FISC submission

Appendix One: Summary of HSW Regulatory Reform: Plant and Structures - proposals

PROTECTING PEOPLE WORKING WITH PLANT AND STRUCTURES, AND DOING HAZARDOUS WORK

Summary of proposed health and safety requirements on businesses to prevent harm to workers

Working with plant, structures, at heights and on excavations causes a significant proportion of New Zealand's work related harm – about 80% of acute work related fatalities (652 of 822 deaths) between 2008 and 2019, and an estimated 80% of work-related serious injuries.

These regulations will place requirements on businesses to manage the risks from working with plant, structures, at heights, and excavations to keep workers and others safe.

Plant and structures are used heavily in high-risk sectors, such as agriculture, construction, forestry, manufacturing, and transport.

Plant is any machinery, equipment, vehicle, appliance, container, implement or tool.

Structures are anything constructed, whether fixed or moveable, temporary or permanent; including buildings, masts, towers, framework, pipelines, quarries, bridges and underground works (like tunnels and shafts).

Businesses must apply the prescribed risk management process: to identify and manage specific risks from working with plant and structures, at height and on excavations

General plant

To improve risk management across the plant life cycle:

- Require businesses to ensure adequate guarding, according to a hierarchy of guarding controls
- Require businesses to ensure safety features are used appropriately and are of safe design, and that appropriate records are kept for presence-sensing systems
- Require businesses to ensure the risks of plant are managed from its purchase to disposal, eg competent and safe maintenance, inspection, testing, alterations and decommissioning
- Customised operational and design requirements for lasers and lifting plant (to address their specific risks).

Mobile plant

To improve management of mobile plant risks:

- Require businesses to ensure suitable devices to protect the operators are provided, maintained and used
- Require businesses to ensure collision risks are managed through appropriate warning devices, and an adequate field of vision
- Require equal (or higher) protections for passengers
- Customised operational and design requirements for forklifts to address their specific risks.

Upstream duties

To clarify the existing obligations of upstream businesses:

- Apply requirements across designers, manufacturers, importers, suppliers and those who construct, install and commission plant and structures.

To improve information exchange across the supply chain:

- Require minimum information to be shared across the supply chain, including where plant is sold second hand.

To promote safety in design and early risk-management interventions:

- Require designers, manufacturers and importers to take action to eliminate, or, where elimination is not possible, minimise hazards
- Require designers and manufacturers to meet equivalent requirements for guarding and safety features, consistent with the requirements for general plant.

Excavations

To improve management of excavation risks, and reduce instances of underground service strikes:

- Require shoring, fencing and notifications to WorkSafe for excavations over 1.5m depth
- Require underground service checks by controllers of site works.

Work at height

To improve risk management when working at all heights, particularly for construction work:

- Require businesses to follow a hierarchy of controls for safe construction work at height, allowing use of a ladder where risk is low
- Align the definition of "construction work" with the Australian Model Regulations, with electrical maintenance and cleaning excluded
- Modernise scaffolding competency requirements to reflect industry practice.

High-risk plant

- To clarify and improve transparency of verification of plant design and inspection of plant
- To address gaps in coverage of new types of plant
- To ensure imported plant is assessed as fit for purpose
- To clarify design verification processes for imported high-risk plant

Adopt new regulations for high risk plant that:

i. Retain existing inspection processes

ii. Include new types of equipment.

Introduce a WorkSafe register of designs of "high-risk plant", covering equipment currently inspected and adding:

i. scaffolding and construction support systems

ii. hoists, lifting and access equipment

iii. steep slope forestry equipment

iv. amusement devices according to risk criteria.

Require specified higher-risks items of plant to be inspected and registered with WorkSafe, with the register to be accessed and updated by accredited inspection bodies and inspection personnel, and:

- large plant operators recognised to maintain their own records
- auditing of model train engineering certification
- territorial authorities permitting higher-risk temporary amusement devices
- including new types of hoists, lifting and access equipment, steep slope forestry equipment and amusement devices,as above.

In Confidence

Office of the Minister for Workplace Relations and Safety

Cabinet Economic Development Committee

Health and Safety at Work regulatory reform: Protecting people working with plant, structures and doing hazardous work

Proposal

1 This paper seeks agreement to a package of regulatory proposals under the *Health and Safety at Work Act 2015* (the HSW Act) for protecting people working with plant (machinery, tools and equipment) and structures, and doing hazardous work at height and on excavations.

Relationship to Government priorities

2 These proposals support the Government's objectives, as outlined in the Speech from the Throne. Protecting people working with plant and structures, and doing hazardous work at height and in, on, and around excavations will help to ensure that the Government's significant investment across many types of infrastructure, to accelerate our economic recovery, is progressed safely and without harm to our workers and communities. Trade training and apprenticeships will benefit from clear requirements on how this work is done safely, keeping those entering the workforce or learning new skills safe as they transition to new jobs. Reducing work-related harm to workers and keeping them healthy, safe and in work helps to lay the foundations for a better future.

Executive Summary

3 Work involving plant and structures causes a significant proportion of New Zealand's acute work-related harm – 79 percent of the 822 work-related deaths between 2008 and 2019, and a high proportion of fatalities in all of WorkSafe New Zealand's (WorkSafe) priority high-risk sectors. In 2019, serious injuries involving plant featured in a significant proportion of entitlement claims to ACC, and falls from height caused over 2,000 injuries resulting in more than a week away from work in the same year.

4 New Zealand's regulatory requirements for plant and structures are outdated and continue to fall well short of the modernised, coherent regulatory framework recommended by the Royal Commission of Inquiry on the Pike River Coal Mine tragedy and Independent Taskforce on Workplace Health and Safety.[1]

5 To address the extensive harm and meet these recommendations, I propose a package of regulatory proposals that require businesses to:

5.1 provide and maintain safe workplace plant and structures, with extra protections through registration and inspection of the highest risk plant, such as boilers and cranes

5.2 provide for the safety of operators of mobile plant (such as tractors, quad bikes and forklifts) and passengers, through a suitable combination of safety devices flexible for

[1] https://pikeriver.royalcommission.govt.nz/; http://hstaskforcegovt.nz/

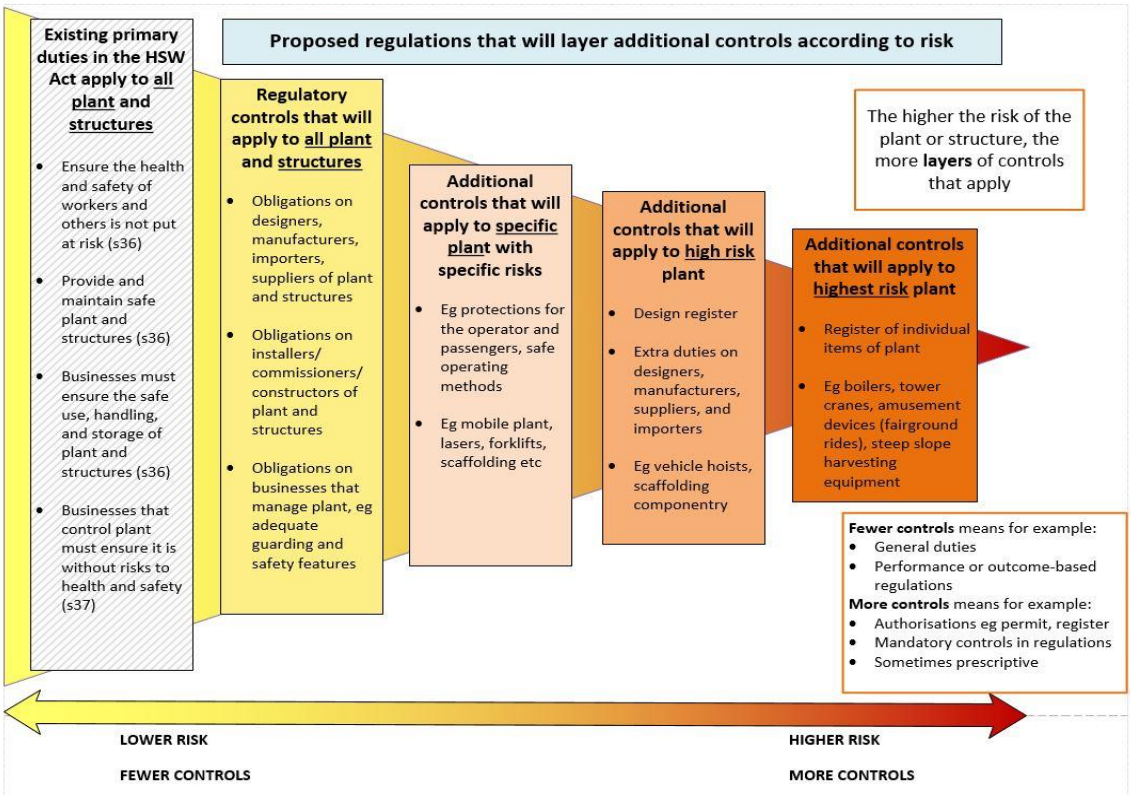
the circumstances (such as roll-over and crush protection, seatbelts and helmets), and safe operating methods

5.3 design, manufacture, import, and supply plant and structures that are safe for use in New Zealand workplaces, by providing critical safety information and taking action to address identified risks early on in the supply chain

5.4 ensure safe work at height and on excavations through risk management processes that are proportionate to the risk and harm.

6 I consider this package provides a balanced set of provisions that are not prescriptive and cater proportionately to different risks and circumstances. **Figure 1** shows how these proposals provide a layered series of protections, the highest of which are reserved for plant with the greatest risks, such as high pressure boilers and tower cranes.

Figure 1: How the HSW Act and proposed regulations layer controls according to risk



7 The proposals will support businesses to meet their primary duties in the HSW Act. They are based on the Australian Model Work Health and Safety Regulations (the Australian Model Regulations), adapted for New Zealand's circumstances and adjusted for submitter feedback after significant public consultation. Stakeholders were in broad support of the proposals and the clarity they will provide on what they need to do to keep workers safe. As many businesses are already complying with best practice, these changes will mostly impact on those who are still choosing to allow more risk in the conduct of their work than is reasonably practicable, which voluntary measures like guidance will not address. Costs for businesses are expected to be modest overall, with marginally more significant costs for the high priority sectors such as agriculture, manufacturing, warehousing and transport, and for businesses who will need to upgrade capital equipment. Based on comparable Australian statistics, the

proposals are expected to reduce New Zealand's work-related fatalities and serious injuries by approximately 20 percent, equating to benefits of approximately $43 million per annum in lives saved.

8 These proposals will modernise and replace existing, outdated regulations under the HSW Act. They will be supported by WorkSafe, the primary regulator for work health and safety, through awareness campaigns, educational tools and guidance for businesses. They significantly progress the substantial reform of work health and safety regulations to address the regulatory failure that culminated in the Pike River Coal Mine Tragedy and recommendations of the Royal Commission.[2]

9 Should Cabinet agree to these proposals, I propose to consult on exposure drafts of the regulations, given their broad application across New Zealand workplaces and often highly technical nature, and to maintain the high level of stakeholder interest and confidence in this process. I will consult on the underpinning components such as offences and fees, and then seek the remaining policy decisions from Cabinet in early 2022.

Progressing New Zealand's regulatory reform of health and safety at work

10 Work with plant, structures, at height and on excavations occurs in most New Zealand workplaces, and particularly in construction, forestry, agriculture, manufacturing and transport. Businesses that are upstream in the supply chain, such as designers, manufacturers, importers, suppliers, and installers of plant and structures in workplaces (collectively referred to as "upstream" businesses), and those involved in decommission and disposal, have a significant influence on the safety of plant and structures used in New Zealand workplaces.

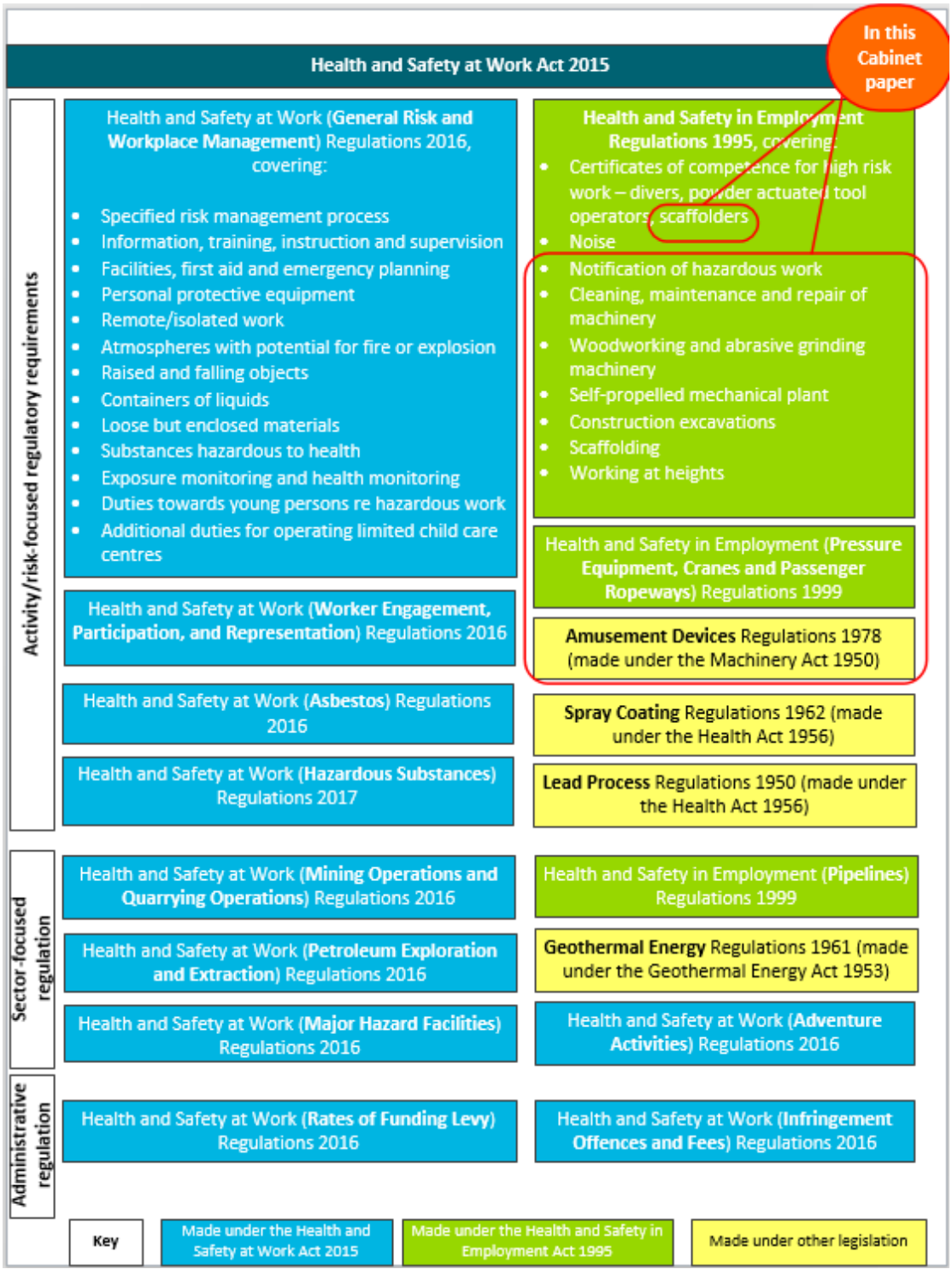
11 New Zealand has significantly reformed its health and safety at work regulatory system in response to the recommendations of the Royal Commission on the Pike River Coal Mine Tragedy [CAB Min (13) 24/10-13]. This package of regulatory proposals is the second substantial tranche of regulatory reform in health and safety at work.

12 Both the Royal Commission and the Independent Taskforce on Workplace Health and Safety found that the previous *Health and Safety in Employment Act 1992* (the HSE Act) was insufficiently supported by appropriate regulation and guidance, and did not support duty holders to comply with their general duties nor adequately manage the risk of catastrophic harm.[3] The regulations were found to be a piecemeal collection of legacy requirements that lacked a coherent logical structure, were weak and outdated in places, contained gaps, or were inaccessible and hard to understand. These problems result in poor risk management giving rise to work-related injuries, illnesses and fatalities.

13 To address these, the Taskforce recommended fundamental reform by adopting the Australian Model Work Health and Safety Law, adapted to New Zealand conditions. The HSW Act came into effect in 2016, with an initial tranche in 2016 and 2017 of ten new sets of regulations based on the Australian Model Regulations. A further seven sets of pre-existing regulations were saved under the new Act, and are the focus of the ongoing regulatory reform programme by MBIE, as outlined in **Figure 2** below.

[2] https://pikeriver.royalcommission.govt.nz/
[3] http://hstaskforcegovt.nz/

Figure 2: Health and Safety at Work Regulatory Framework



Risks from plant and structures cause 79% of NZ's acute work-related harm

14 New Zealand has seen a significant reduction in work-related acute fatality rates over the past 10 years, which is currently tracking below its target for 2020. Since 2016, however, our progress has stalled and is now starting to worsen. Our rate of work-related acute fatalities is still high by international standards, approximately twice that of Australia and four times the

rate of the United Kingdom (UK), suggesting that considerable opportunities remain for improvement.

15 Our other system performance measures have shown less progress, and we are unlikely to meet the 2020 targets based on the most recent data. The rate of serious work-related acute injuries initially declined, before increasing again and now remaining above its 2020 target. The rate of work-related acute injuries resulting in more than a week away from work has consistently risen over the course of the decade, and sits above both its target and baseline measures.

16 The risks arising from working with plant and structures cause a significant proportion of New Zealand's work-related harm – 652 work-related deaths between 2008 and 2019 involved plant and structures, which was 79 percent of the 822 work-related fatalities during that period.[4] In this same period, nearly all fatalities in WorkSafe's priority sectors involved plant or structures: 83 percent of construction fatalities, 74 percent of manufacturing fatalities, 79 percent of fatalities in the Agriculture, Forestry and Fishing sector, and 93 percent of fatalities in Transport, Postal and Warehousing. Of the 37,000 entitlement claims made to ACC in 2019, plant and machine operators and assemblers had the highest number of claims (8,000) followed by trades workers (5,800), who also work predominantly with plant and structures.[5]

The majority of all work fatalities involve plant, particularly mobile plant

17 Plant and mobile plant is a major cause of harm in WorkSafe's priority sectors, such as transport and warehousing, agriculture, forestry and fishing, manufacturing, and construction. Sixty-one percent of all work fatalities involve plant. The types of harm caused by plant are diverse and varied: machinery entrapment, crushing injuries, and ill-health arising from exposure to harmful substances, such as chemicals, fumes, and dust. Some risks are long-standing while others are more recent from the modernisation of technology, such as lasers, and will continue to evolve as technology evolves.

18 Using mobile plant results in distinct risks and significant harm, causing 92 percent of all fatalities involving plant, and an estimated 60 percent of serious injuries.[6] The movement of mobile plant in dynamic working environments such as construction sites, warehouses, or on variable terrain, causes harm from overturning, collisions, and exposure to harmful substances such as diesel particulates. These risks are often intensified by the weight of the machinery involved, over 1,500 kg for forklifts and up to 500 kg for quad bikes. This harm occurs to operators, passengers and bystanders.

The safety of New Zealand's plant is affected by designers and suppliers upstream

19 The most effective risk control measure – eliminating hazards – is both cheaper and more effective to achieve at the design or planning stage than managing risks later in the lifecycle by retrofitting safety features. By placing requirements across the whole supply chain the

[4] This total excludes the 29 fatalities from the Pike River Coal Mine tragedy.
[5] ACC entitlement claims are those that result from the more serious injuries, and include rehabilitation and compensation for lost earnings.
[6] Based on data from 2008-2017 for fatalities, and 2011-2019 for serious injuries.

responsibility for ensuring plant is safe does not just fall to the end user of the plant, where it is most costly, but instead falls on those best placed to manage the risks.

20 While New Zealand has limited information about the harm caused by poor design, manufacture, import, supply, and installation of plant, international research suggests that these duty holders play a significant role in ensuring the safety of plant.

21 Australian research shows that not meeting upstream duties contributed to issues in 43 percent of workplace visits, and that upstream issues were often not pursued by inspectors. WorkSafe has indicated that it is often difficult to enforce the broad upstream duties in the HSW Act. Since 1992 there have been 41 prosecutions for upstream duties under the HSW Act and its predecessor HSE Act, with most of these focusing on the supplier, which is usually the most proximate upstream duty holder.

High-risk plant failure is infrequent but the risks are significant

22 High-risk plant is plant that can cause significant harm when it fails. It includes industrial pressure equipment such as boilers, cranes, passenger ropeways such as ski-lifts and gondolas, and engineered amusement devices such as fairground rides and bungy equipment. New Zealand has regulated boilers, cranes and other types of high-risk plant progressively since the nineteenth century and the potential risks from unsafe plant are well understood.

23 Failures of high-risk plant are infrequent, but significant when they do occur. The most serious recent incident involving pressure equipment in New Zealand was at a Waikato coolstore in 2008, in which a major explosion and fire killed one fireman and seriously injured six others.

24 There have been few deaths or serious injuries on amusement devices since regulations for these were passed in 1978, although serious injuries and incidents occur from time to time. The most recent fatality on an amusement device involved an employee completing pre-start up checks at Auckland's Rainbow's End amusement park in 2008. The recent Dreamworld tragedy in Queensland has put focus on the regulation of amusement devices across all Australian state jurisdictions.

Hazardous work at height and on excavations is ubiquitous across many sectors

25 Work at height is common across many sectors in New Zealand, with harm particularly high in the construction sector. In 2019, falls from height caused over 2,000 injuries resulting in more than a week away from work, with over a quarter of these in the construction industry. There were 32 work-related fatalities caused by falls from height over the period from 2008–2017, with 19 of these in the construction sector.

26 The harm from work on excavations is less than that for work at height, reflecting better industry practice and regulatory requirements targeted at the most extreme harm caused by excavation collapse. Between 2008 and 2018, there was an average of one fatality from excavation work every two years, with about 15 injuries each year that result in at least a week off work. There is clear evidence of economic disruption from utility line strikes (telecommunications, water, electricity and gas) caused by excavation work, with over 13,000 line strikes in New Zealand in the year 2018/19.

Complexity and unclear regulatory requirements contribute to poor risk management

27 While risks from plant and structures have a long history of being governed by regulation, significant harm is still occurring. Increasing complexity makes it difficult for businesses to know how to properly manage the risks and put the right controls in place. These risks are both long standing and also increasingly:

27.1 more complex through technological change – lasers and automation reducing some risks while introducing new ones

27.2 affected by globalisation – increasing importation of plant reduces the ability of the end user to ensure the plant is optimally designed and manufactured for safe use in their specific circumstances, and that it meets New Zealand's expectations

27.3 affected by changing working arrangements – long contracting chains in sub-contracting or labour hire, common to workplaces involving plant, structures, height and excavations, reduce clarity on who has the obligation to manage these risks

27.4 heightened by the prevalence of aging plant and poor quality secondhand plant in New Zealand – this increases risk to end users from poor maintenance or repair by previous owners that may not be apparent.

28 The existing regulations contribute to this complexity as they have not kept pace with these changes. They are outdated, piecemeal, hard to understand and apply, and do not reflect industry best practice, which means they do not provide equal protections to workers. Public consultation confirmed that good risk management is not consistently adopted, resulting in entrenched poor work practices, such as inadequate guarding and unsafe modifications of machinery, and continuing high rates of work-related harm.

Requirements to ensure safe workplace plant are outdated and piecemeal

29 Safe workplace plant is integral to good work health and safety. For plant to be safe, its risks need to be systemically well-managed, but this is not being achieved. Workers are persistently exposed to avoidable risks, including inadequate guarding of dangerous machinery, unsafe machinery modifications, or from poorly maintained plant, which is of particular concern for New Zealand due to the prevalence of older machinery and equipment.

30 Existing requirements under the *Health and Safety in Employment Regulations 1995* (the HSE Regulations) for plant are not coherent and do not provide sufficient clarity for workers or businesses on how particular risks should be managed. These requirements:

30.1 have fallen behind earlier, long-standing protections under the *Machinery Act 1950* (which was revoked in 2016 as a transitional step to modernising these requirements)

30.2 have fallen out of step with the wide range of plant operated within modern workplaces (such as lasers and safeguarding systems for machinery that work by sensing the presence of people within danger zones)

30.3 have not kept pace with the more comprehensive requirements of the UK and Australia, countries with demonstrably lower levels of work-related harm.

31 Voluntary mechanisms such as guidance have not been enough on their own to address the high levels of harm caused by unsafe plant and working practices.

Mobile plant requirements are sparse and inconsistent with modern technology

32 Health and safety requirements for mobile plant have been traditionally sparse and remain so. A range of exclusions (some originating from 1967 for vehicles weighing less than 700 kg) have served to reinforce the selectiveness of coverage as the amount of plant excluded has grown significantly over time, for example the proliferation in the use of quad bikes and side-by-side vehicles. The exclusions are at odds with the primary duty of care under the HSW Act on businesses to ensure that mobile plant does not put workers and others at risk.

33 In particular, regulations exclude many types of mobile plant from the requirement to have seat belts and roll-over protection, even though these will often constitute what is reasonably practicable in the circumstances to prevent harm under the primary duty of care. Where they do apply, the existing regulations address only some risks, and more generally have fallen out of step with current ways of working, technology, and the modernised, performance-based HSW Act. The limited mandatory protections in New Zealand contrast with the more comprehensive requirements of the UK and Australia.

34 WorkSafe is continuing to address the harm caused by mobile plant through a range of measures from guidance through to industry collaborations. In spite of this, the harm caused remains unacceptably high.

Upstream businesses want more clarity on how to meet their primary obligations

35 The HSW Act places duties on upstream businesses to ensure safe plant and structures, where these are to be used in a workplace, reflect that these duty holders play an important role in ensuring plant is safe before it enters a workplace. In stakeholder consultation, upstream businesses consistently wanted more clarity on how they could fulfil these duties.

36 A contributor to poor quality plant in New Zealand is a lack of information being passed between duty holders, including:

36.1 conditions of manufacture and use necessary to achieve the safe operation of plant

36.2 information about any faults in secondhand plant or modifications made to plant.

37 Safety features, such as guarding, need appropriate design and manufacture to ensure they work effectively. Information on safety features should be passed onto the business that purchases the plant and the operators of the plant to support safe use of the plant.

38 Unsafe alterations of plant that change its original design, such as removing guarding, causes significant harm. People often make these changes without considering the health and safety implications or being aware these changes fall under the design responsibilities of the Act.

39 In stakeholder consultation, MBIE received consistent feedback about the low quality of imported plant. Not all New Zealand's large quantity of imported plant meets our health and safety expectations, for example, not having suitable guarding fitted. Importers and suppliers of plant play a key role in ensuring that the plant that comes into New Zealand is safe.

High-risk plant regulations are working well but can be improved

40 High-risk plant is currently regulated under the *Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999* (PECPR Regulations) and the *Amusement Devices* Regulations *1978* (the Amusement Devices Regulations). More detail is provided in **Appendix One**. These regulations are significant for the manufacturing and construction sectors and fundamental to the operation of amusement devices and ski-fields.

41 The PECPR Regulations are estimated to apply to more than 50,000 individual items of plant and require the business that controls or owns an item of plant to:

41.1 ensure the plant has been "design verified" – an independent peer review of each design to ensure that it meets the standard to which it has been designed

41.2 hold a current certificate of inspection for that item - Inspection bodies are accredited by International Accreditation New Zealand (IANZ), and inspection personnel are certified by the national Certification Board for Inspection Personnel (CBIP).

42 The Amusement Devices Regulations apply to about 345 fairground rides, winched bungy operations and a wide range of other mechanical amusements. These must:

42.1 be inspected and certified by a Chartered Professional Engineer (CPEng)

42.2 have two yearly registration with WorkSafe, and a permit from the relevant territorial authority each time the device is set up to offer rides to the public.

43 Model railway and steam engine clubs that carry passengers are exempt from the requirement for a CPEng certificate. They may instead be registered with WorkSafe after an audit by a competent person from another club, under a system of Model Engineering Association of New Zealand Incorporated (MEANZ) accredited inspections.

44 While these regulations have worked well over time, they were made under earlier primary legislation, have become dated in some respects and have limitations. Public consultation by MBIE over 2019 and 2020 confirmed that these requirements are generally working, but that there are areas for improvement:

44.1 Gaps and inconsistencies in coverage – new types of high-risk plant have increased in use and give rise to risks that may warrant design verification and/or registration

44.2 Gaps in compliance with current inspection requirements – WorkSafe estimates that at any given time only about 75 to 80 percent of plant has an inspection certificate

44.3 No central register of plant – records relating to individual items of plant can be difficult for inspectors and businesses to obtain, with a lack of assurance that the plant is fit for purpose and properly maintained, whether new or secondhand, and particularly for imported plant

44.4 Limited regulator oversight and limited reporting of "type faults" (safety-critical faults that occur across a type of plant) or failures of individual plant items, where there have been no injuries but where failure could potentially cause significant harm

44.5 Design verification requirements, a critical component of high-risk plant safety, are not sufficiently clear and are applied inconsistently – documentation is difficult and expensive for plant suppliers and operators to obtain, plant is often altered without peer review or full consideration of the impacts, and seismic performance is sometimes not adequately considered

44.6 Territorial authorities' involvement in permitting amusement devices is unclear and variable – operators have questioned the need for territorial authority permits, and territorial authorities have expressed concerns that the low fees make it hard for them to maintain the required capability, representing a risk to the public and authorities

44.7 The regulations do not formally require design verification for amusement devices – leaving these questions to the professional judgement and discretion of the CPEng

44.8 Several incidents at model engineering clubs involving passengers – the effectiveness of the current requirements has been called into question for some clubs

44.9 Limited incentives to build competency for those installing and operating devices.

Requirements for work at height and on excavations are not proportionate

45 Work at height in New Zealand has long been subject to regulatory requirements. The HSE Regulations provide strict rules for work above three metres, other than in agricultural work, with additional controls for scaffolding in construction work.[7]

46 Since the regulator supplemented the regulations with more comprehensive guidance in 2012 to address gaps and increase clarity, there have been improvements in safe working at height and rates of harm. I consider that New Zealand still has unreasonably high rates of harm, however, particularly in the construction industry.

47 Improved guidance alone does not offer an effective solution for addressing the regulations' underlying inconsistencies. The regulations are out of step with the best practice guidance, lacking specific requirements on how to manage the risk of falls when working below three metres, which also causes significant harm. These inconsistencies make enforcement difficult for the regulator. They lead to both under-compliance and over-compliance – some businesses only focus on work at height that is over three meters, resulting in insufficient protection at lower heights. Conversely, for work at lower heights, some submitters indicated that they felt compelled to provide a higher level of protection than they felt necessary, such as scaffolding for a simple roof gutter repair or minor electrical maintenance work.

48 The regulatory process for recognising the competency of scaffolders has become inconsistent with the New Zealand qualifications framework and current industry practice. The rules for when scaffolding is required to be constructed and inspected by a qualified scaffolder and the rules for notification to WorkSafe do not align.

49 The excavation regulations require that controls be applied when an excavation that is construction work is of sufficient depth – at 1.5 metres – to be considered high risk work, with protections to prevent excavation collapse. They do not support a proportionate risk-based approach, inadequately protecting workers at more shallow depths. The regulations

[7] Construction work is defined to include many different types of engineering works and structures. The definition is very broad, covering all stages in the lifecycle of structures, including building, repair, maintenance, and cleaning.

allow exemptions from shoring requirements when the ground is stable and there is no risk of collapse, but do not require any particular competence to make this determination.

50 There is no requirement to check for underground services such as electricity and gas lines before starting excavation work. A lack of clarity in who is responsible for checking underground services leads to poor practice and disruptive and dangerous line strikes.

51 Many companies are following the best practice guidance for excavations, developed in 2016 by WorkSafe alongside industry experts. These guidelines include applying a more detailed risk management process and checking for underground services, but these are voluntary and not required by regulations.

52 Stakeholders for both work at height and on excavations valued the guidance developed by WorkSafe alongside industry as supporting best practice. There was near universal agreement with the problems identified with the regulations. Stakeholders supported revised regulations that require a more proportional risk-based approach, and improved clarity on mandatory protections.

I propose a package of regulatory provisions to address these risks and harms

53 I propose a package of regulatory provisions that work together to address these problems and reduce harm. The provisions are summarised in **Table 1** below.

54 They are based on the Australian Model Regulations, adapted for New Zealand's circumstances and adjusted for stakeholder feedback. Public consultation has shown widespread support for these proposals and broad acceptance that the Australian Model Regulations offer the best foundation for new regulations.

55 The requirements are mainly placed on the Person Conducting a Business or Undertaking (PCBU), the primary duty holder in the HSW Act, and will provide a means and the underpinning detail for PCBUs to meet their existing primary duty of care in the Act. These regulations will not stand alone but will be supported by WorkSafe through awareness campaigns, educational tools and guidance to educate and inform businesses on what to do.

56 The regulatory proposals are not wholly new but will replace, modernise and fill gaps in the existing, long-standing regulations. They provide clarity, while applying flexibly to common risks across sectors without being prescriptive. Most requirements will apply 'so far as is reasonably practicable', meaning the PCBU must consider what is reasonably able to be done and weigh up relevant factors, such as the likelihood of the hazard occurring, the degree of harm, and the availability and suitability of ways to address the risk.

57 **Appendix Two** sets out a series of illustrative case studies describing in more detail how the changes will operate in practice and types of issues they are expected to resolve.

Non-regulatory options will not be an effective solution by themselves

58 Non-regulatory options such as increasing the operational responses by the regulator – education, engagement, and enforcement of existing regulations – do not offer an effective solution by themselves. They will not address the deficiencies in the regulatory regime found by the Independent Taskforce. Increasing education and enforcement based on outdated regulatory requirements would be ineffective and confusing for businesses.

PROTECTING PEOPLE WORKING WITH PLANT AND STRUCTURES, AND DOING HAZARDOUS WORK

Summary of proposed health and safety requirements on businesses to prevent harm to workers

Working with plant, structures, at heights and on excavations causes a significant proportion of New Zealand's work related harm – about 80% of acute work related fatalities (652 of 822 deaths) between 2008 and 2019, and an estimated 80% of work-related serious injuries.

These regulations will place requirements on businesses to manage the risks from working with plant, structures, at heights, and excavations to keep workers and others safe.

Plant and structures are used heavily in high-risk sectors, such as agriculture, construction, forestry, manufacturing, and transport.

Plant is any machinery, equipment, vehicle, appliance, container, implement or tool.

Structures are anything constructed, whether fixed or moveable, temporary or permanent; including buildings, masts, towers, framework, pipelines, quarries, bridges and underground works (like tunnels and shafts).

Businesses must apply the prescribed risk management process: to identify and manage specific risks from working with plant and structures, at height and on excavations

General plant

To improve risk management across the plant life cycle:

- Require businesses to ensure adequate guarding, according to a hierarchy of guarding controls
- Require businesses to ensure safety features are used appropriately and are of safe design, and that appropriate records are kept for presence-sensing systems
- Require businesses to ensure the risks of plant are managed from its purchase to disposal, eg competent and safe maintenance, inspection, testing, alterations and decommissioning
- Customised operational and design requirements for lasers and lifting plant (to address their specific risks).

Mobile plant

To improve management of mobile plant risks:

- Require businesses to ensure suitable devices to protect the operators are provided, maintained and used
- Require businesses to ensure collision risks are managed through appropriate warning devices, and an adequate field of vision
- Require equal (or higher) protections for passengers
- Customised operational and design requirements for forklifts to address their specific risks.

Upstream duties

To clarify the existing obligations of upstream businesses:

- Apply requirements across designers, manufacturers, importers, suppliers and those who construct, install and commission plant and structures.

To improve information exchange across the supply chain:

- Require minimum information to be shared across the supply chain, including where plant is sold second hand.

To promote safety in design and early risk-management interventions:

- Require designers, manufacturers and importers to take action to eliminate, or, where elimination is not possible, minimise hazards
- Require designers and manufacturers to meet equivalent requirements for guarding and safety features, consistent with the requirements for general plant.

Excavations

To improve management of excavation risks, and reduce instances of underground service strikes:

- Require shoring, fencing and notifications to WorkSafe for excavations over 1.5m depth
- Require underground service checks by controllers of site works.

Work at height

To improve risk management when working at all heights, particularly for construction work:

- Require businesses to follow a hierarchy of controls for safe construction work at height, allowing use of a ladder where risk is low
- Align the definition of "construction work" with the Australian Model Regulations, with electrical maintenance and cleaning excluded
- Modernise scaffolding competency requirements to reflect industry practice.

High-risk plant

- To clarify and improve transparency of verification of plant design and inspection of plant
- To address gaps in coverage of new types of plant
- To ensure imported plant is assessed as fit for purpose
- To clarify design verification processes for imported high-risk plant

Adopt new regulations for high risk plant that:

i. Retain existing inspection processes
ii. Include new types of equipment.

Introduce a WorkSafe register of designs of "high-risk plant", covering equipment currently inspected and adding:

i. scaffolding and construction support systems
ii. hoists, lifting and access equipment
iii. steep slope forestry equipment
iv. amusement devices according to risk criteria.

Require specified higher-risks items of plant to be inspected and registered with WorkSafe, with the register to be accessed and updated by accredited inspection bodies and inspection personnel, and:

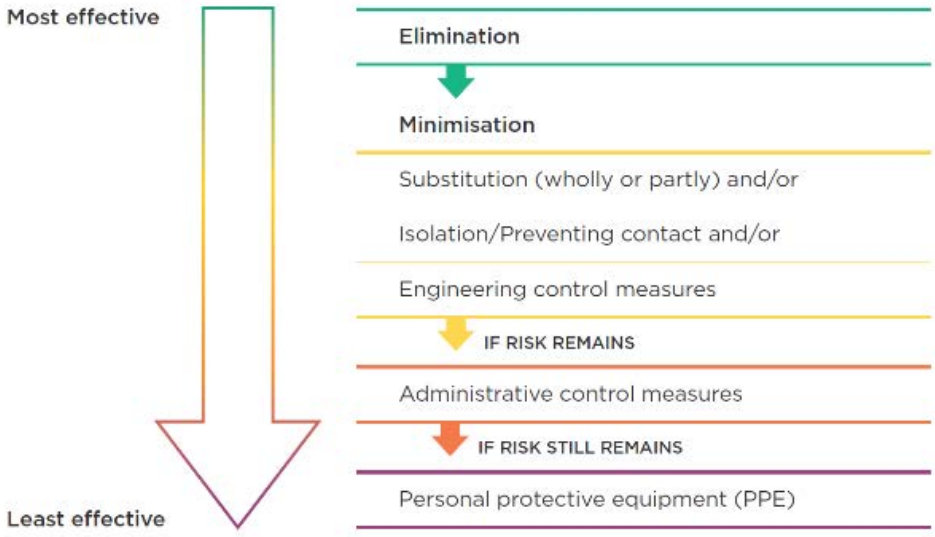
- large plant operators recognised to maintain their own records
- auditing of model train engineering certification
- territorial authorities permitting higher-risk temporary amusement devices
- including new types of hoists, lifting and access equipment, steep slope forestry equipment and amusement devices, as above.

Requiring the prescribed risk management process will drive better control of critical risks

59 In line with the Australian Model Regulations, I propose requiring businesses to apply the Prescribed Risk Management Process, set out in the *Health and Safety at Work (General Risk and Workplace Management) Regulations 2016* and outlined in **Figure 3** below, to critical risks that are common across sectors for plant, mobile plant, work at height and on excavations.

60 This requirement is an expansion of the risk management process already required of businesses by section 30 of the HSW Act to meet their primary duty of care, by eliminating or minimising risks. While the section 30 requirement must be applied across all work-related risks, the more detailed Prescribed Risk Management Process is applied to common critical risks as specified in regulation. The existing HSW regulations already apply the Prescribed Risk Management Process to remote work, raised or falling objects, explosive atmospheres, and substances hazardous to health. The process requires businesses to identify and focus more closely on risks that are critical but need a flexible approach, rather than specifying the same prescriptive controls for all situations. It also explicitly requires businesses to check that the controls are working and to review them.

Figure 3: the Prescribed Risk Management Process



Modernised requirements to manage the long-standing risks arising from working with plant

61 I propose a package of modernised requirements that support businesses to meet their primary duty of care to manage the long standing risks from working with plant, which cause a significant portion of our work-related harm.

62 To manage the risks specific to guarding, operation, cleaning and maintenance of plant, I propose that businesses must:

62.1 apply a specified process to determine the appropriate guarding for their specific plant and circumstances, consistent with AS/NZS Standards

62.2 ensure safe maintenance and cleaning of plant, and safe operational controls, emergency stops and warning devices

62.3 maintain the integrity of presence-sensing safeguarding systems, through keeping records of testing, inspection, maintenance and alteration.

63 To ensure that businesses consider and control the wider health and safety risks of plant during its lifecycle, from its purchase to its disposal, I propose that they must:

63.1 apply the Prescribed Risk Management Process to the risks arising from plant

63.2 arrange inspection whenever plant is altered, to ensure the risks are monitored

63.3 use a competent (set by a person's knowledge and skills, whether gained through training, qualification or experience) person whenever plant is altered, maintained, inspected or tested

63.4 prevent unauthorised alterations or unintended use that is not contemplated by the plant's design and which compromises health and safety as a result.

64 For plant that lifts or suspends loads and for laser equipment, I propose that businesses meet additional controls that ensure the specific risks from this plant are considered and managed.

65 Collectively, these proposals will provide for:

65.1 specific safety-by-design requirements for safety features such as guarding, warning devices and emergency stops

65.2 managing the risk across the plant's lifecycle through broad-based control measures, reinforced by corresponding duties on designers, manufacturers and suppliers

65.3 addressing the distinct risks of modifications and aging plant, which are prevalent in New Zealand workplaces.

66 Alternative means of compliance will be allowed for in certain circumstances (such as tree work) to ensure requirements are proportionate to the risk and harm.

67 Generally the changes proposed were well-received by stakeholders. While there was overall support from most sectors, forestry and fisheries groups objected to the changes. Forestry groups suggested the changes proposed were ill-suited to particular circumstances, specifically involving the use of lifting plant that is distanced from workers and others. Within the fisheries sector there were objections to bringing in regulatory requirements that intersect with Maritime Rules. Given that the proposals allow for differentiated approaches (for example, controlling the risks of aging forestry equipment by requiring safe working distances, and targeted exclusions for plant on board vessels as outlined further below in this paper), I am satisfied that the reforms recommended are proportionate for the level of risk involved, while also maintaining equal protection for workers across sectors.

Increased protections for working with mobile plant and aligning with HSW Act duties

68 Mobile plant poses distinct risks over and above those arising from plant generally. To build on the general plant proposals above to manage the distinct risks from mobile plant, I propose regulatory requirements on businesses to:

68.1 apply the Prescribed Risk Management Process to the risks specific to mobile plant, such as overturning, collision, or being thrown from the plant

68.2 ensure a suitable combination of devices (such as roll-over and crush protection, seatbelts and helmets) to protect the operator – **Figure 4** below provides an illustration of a roll-over/crush protection device on a quad bike

Figure 4: Illustration of roll-over/crush protection device on a quad bike

68.3 ensure passengers are only allowed where they have protections at least as high as that provided to the operator

68.4 manage the risks of collision, through an adequate field of vision and suitable warning devices

68.5 meet additional design and operational controls to manage the specific risks from forklifts.

69 These provisions will modernise and replace the current, prescriptive requirements for roll-over protection and seatbelts. They provide a flexible requirement that is proportionate to the circumstances and risks and that protects passengers and bystanders.

70 Consultation showed general support for these proposals. Some opposition from Federated Farmers to the removal of existing regulatory exclusions – such as those applying to quad bikes and other plant under 700 kg from requirements for roll-over protection and seatbelts – was matched by support from others, such as Horticulture NZ and the Agricultural Leaders' Health and Safety Action Group. These exclusions are a product of a different time, and I recommend they are removed as I consider them unnecessary, harmful, and damaging to the integrity of the proposed package of reforms.

71 Transitional arrangements are yet to be confirmed, pending further consultation with stakeholders. A phased approach will apply to implementation, to moderate the impact of the changes for older equipment requiring upgrades.

Clarifying existing upstream duties to reduce harm and costs for downstream businesses

72 The proposals for upstream duties address duty holder concerns by providing more detailed requirements giving clarity on how to meet their duties in the Act to ensure safe plant and structures. Duty holders must follow processes for sharing information and addressing hazards, and they must consider certain requirements when including safety features.

73 Specifically duty holders will be required to:

73.1 share critical safety information across the supply chain – to provide this information to the person downstream and to seek that same information from the person upstream, while the person receiving this information must use it

73.2 take action to manage risks and hazards identified as part of their role (as designers, manufacturers and importers), including consulting with the designer where possible

73.3 share information about the faults in secondhand plant to the person being supplied the plant – this requirement will not apply when supplying secondhand plant 'as is', as this is excluded from the supplier duty in the HSW Act[8].

73.4 meet the equivalent requirements for guarding and safety features placed on businesses that use the plant, complementing the requirements for general plant.

73.5 provide information to designers about the reasonably foreseeable risks and hazards at the workplace where the plant or structure will be used – required of businesses ordering or requesting a new design of plant, or a structure not covered by the *Building Act 2004.*

73.6 have regard to information provided by upstream businesses, or the instruction of a competent person – required of installers, constructors and commissioners of structures not covered by the *Building Act 2004*.

74 These proposals reinforce and complement the regulatory proposals for ensuring plant is safe, by placing equivalent requirements across all participants in the supply chain. Improving design choices at the start of the supply chain is more cost effective than passing responsibility for safety down to the end user of the plant. I expect these changes to result in more and better quality information being shared between businesses, safer plant entering workplaces over time, and less harm to workers who use it.

Modernising requirements for high-risk plant

75 I propose to modernise the current regulatory requirements for high-risk plant, revising and consolidating them into a single set of regulatory obligations. The new regulations will retain the essential features that have worked well, while incorporating components of the Australian Model Regulations and improving consistency with the HSW Act. They will apply to specified types of high-risk plant, as prescribed under section 12 of the HSW Act, to

[8] Suppliers may, in response to the requirements proposed, opt to supply secondhand plant 'as is' rather than meet the new information requirements. This potential risk will be mitigated through the design of the regulation – purchasers will either be provided the required information about the plant by the supplier under the new requirement, or know they have to check the plant for faults if it is sold "as is" with no information provided. The requirements in the general plant section support this, as they require the PCBU who manages or controls plant at workplaces (in this case the purchaser) to ensure it is safe for use. WorkSafe guidance will explain how this provision works.

ensure the safety of workers and the public in all situations, and whether or not it is being operated by a business, or for gain or reward.

76 The existing regulations have supported the development and availability of engineering expertise and an acceptance that regular inspection and maintenance are essential for the safe operation of such high-risk plant. The proposed amendments are intended to retain and build on this positive culture in workplaces and the engineering profession.

77 Consultation showed broad support for this approach. Support for existing inspection body accreditation and inspection processes being retained in new regulations was almost unanimous, suggesting that the current regulations are properly oriented, but need refinement in certain areas. Significant purchasers and users of high-risk plant, including in the construction and manufacturing sectors, ports, property interests, and territorial authorities supported the introduction and expansion of the registers.

Registering verified designs of high-risk plant

78 I propose a new explicit duty on suppliers and operators of specified types of high-risk plant to ensure that plant is of a registered design, which is verified by a suitably qualified engineer and recorded on a central register to be established and operated by WorkSafe.

79 The register will be for all classes of plant currently covered by the PECPR Regulations and the Amusement Devices Regulations, as well as newer technology, including:

79.1 steep-slope mechanical forestry harvesting equipment

79.2 elevating work platforms and other mechanical access equipment

79.3 certain categories of portable cranes, and other large scale lifting equipment

79.4 concrete pumping/placing booms and hydraulic arms

79.5 hydraulic vehicle hoists

79.6 scaffolding, edge protection, and proprietary construction support systems.

80 There was support for including most of the new categories of plant, but some objection from the forestry sector to the inclusion of various types of steep slope forestry/harvesting equipment. I consider the case for requiring registration is clear, and further consultation by MBIE with the sector has resolved concerns and provided a way forward. **Figure 5** below provides an illustration of steep-slope mechanical forestry harvesting equipment.

Figure 5: Illustrative examples of high-risk plant

Clockwise from top left – steep-slope forestry harvesting equipment, a large industrial plant, a large inflatable slide, and a higher-risk portable fairground ride

81 The new design registration requirement will apply after a specified period to all new types of high-risk plant. Transitional provisions will apply to existing plant designs, and for existing items of plant requiring design verification as a prerequisite to item registration, as below.

Registering individual items of plant

82 I propose a new duty on operators to register specified items of high-risk plant, after inspection (already required under existing regulations). The register will be for items of plant that give rise to the highest risk, and will include all classes of plant currently covered by the PECPR and Amusement Devices Regulations, as well as:

82.1 steep-slope mechanical forestry harvesting equipment

82.2 elevating work platforms and other mechanical access equipment

82.3 certain categories of portable cranes, and other large scale lifting equipment

82.4 concrete pumping/placing booms and hydraulic arms.

83 The register will significantly address the problems of coverage and levels of conformity experienced with current high-risk plant inspections. The central register will be operated by WorkSafe, and inspection bodies will be able to maintain inspection records on the register.

84 The principle for how these provisions will apply to both new and existing plant will be that all new plant is required to be design verified and registered. For existing items of plant, the

registrar will accept equivalent documentation from within New Zealand, such as where records were kept under earlier legislation, or from other jurisdictions. For older plant, item registration will be on the basis of a risk-based inspection, instead of requiring design registration. The approach to transitional provisions is outlined further below in this paper.

Large industrial plant operators

85 Some owners of large-scale bespoke pressure equipment were opposed to both design registration and registration of items of plant, including meat processors, a paper and board manufacturer, petrochemical plants, and power generators. **Figure 5** above provides an illustration of the scale of this plant. Some of these businesses operate older equipment that is inspected under the PECPR regulations but, if installed before 1999, may not have been design verified or had any reassessment of its design or service life.

86 Most of these businesses currently operate under recognition by WorkSafe, allowing them to vary their inspection cycles according to risk assessments, and to take a systems-based approach to plant maintenance.

87 I propose that the new regulations provide for these operators to be recognised to maintain their own record keeping of such complex systems, while being subject to an approval and regular audit process. This will achieve more transparency for the regulator, while maintaining confidentiality of any commercially sensitive information related to their equipment and not creating undue administrative or engineering consultancy costs.

Amusement devices

88 The above registration requirements will apply to amusement devices covered by the current regulations. The sector is already subject to central registration and this is well accepted. I am proposing the new regulations:

88.1 adopt the risk-based definition of "amusement device" from the Australian Model Regulations, which will apply to a broader range of engineered recreational activities according to risk. The definition will be modified to preserve New Zealand's current regulatory split between amusement devices and adventure activities, as Australian states do not have an adventure activities regulatory regime. **Figure 5** above provides an illustration of a large inflatable slide that will be captured by the new definition.

88.2 Retain territorial authority permitting of amusement device installation, but for higher-risk portable amusement devices only – MBIE will work with Local Government New Zealand to better define this coverage and consider applicable fees.

88.3 retain the existing model engineering inspection regime while also requiring MEANZ to be audited by IANZ and recognised as an inspection body.

88.4 introduce new requirements for operator training, inspection and maintenance of amusement devices, in response to learnings from the Dreamworld tragedy.

89 MBIE consulted on whether territorial authority permitting should be retained, on the assumption that there needs to be a consistent standard and application of permits. Submissions and subsequent consultation with the sector has led to the proposals to limit territorial authority involvement to higher-risk portable amusement devices that are installed

temporarily, while clarifying territorial authorities' obligations for permitting and inspection. **Figure 5** above provides an illustration of such a device.

90 A majority of amusement devices submissions were from amateur model engineering clubs affiliated to MEANZ. They were opposed to changes to the current system of MEANZ-accredited inspections that applies to them in lieu of a CPEng inspection. There have been safety failures and concerns raised about this group, but I consider that requiring MEANZ to be recognised as an inspection body to perform this role will address these concerns and improve safety standards for model engineering activities by these voluntary groups. MEANZ has indicated a willingness to follow this change.

Better management of risks at height

91 I propose that businesses apply the Prescribed Risk Management Process (PRMP) to all work at height, to support businesses in meeting their primary duty of care. This approach will remove current exemptions for work at heights below three metres and in agriculture.

92 Both work at height and on excavations have long had greater requirements for construction work, reflecting the increased risks involved. I propose revising the definition of construction work to be more in line with the Australian Model Regulations, and explicitly excluding cleaning and electrical maintenance.[9] Clearly defining the higher risk work that requires additional protections will help businesses know where these increased obligations apply.

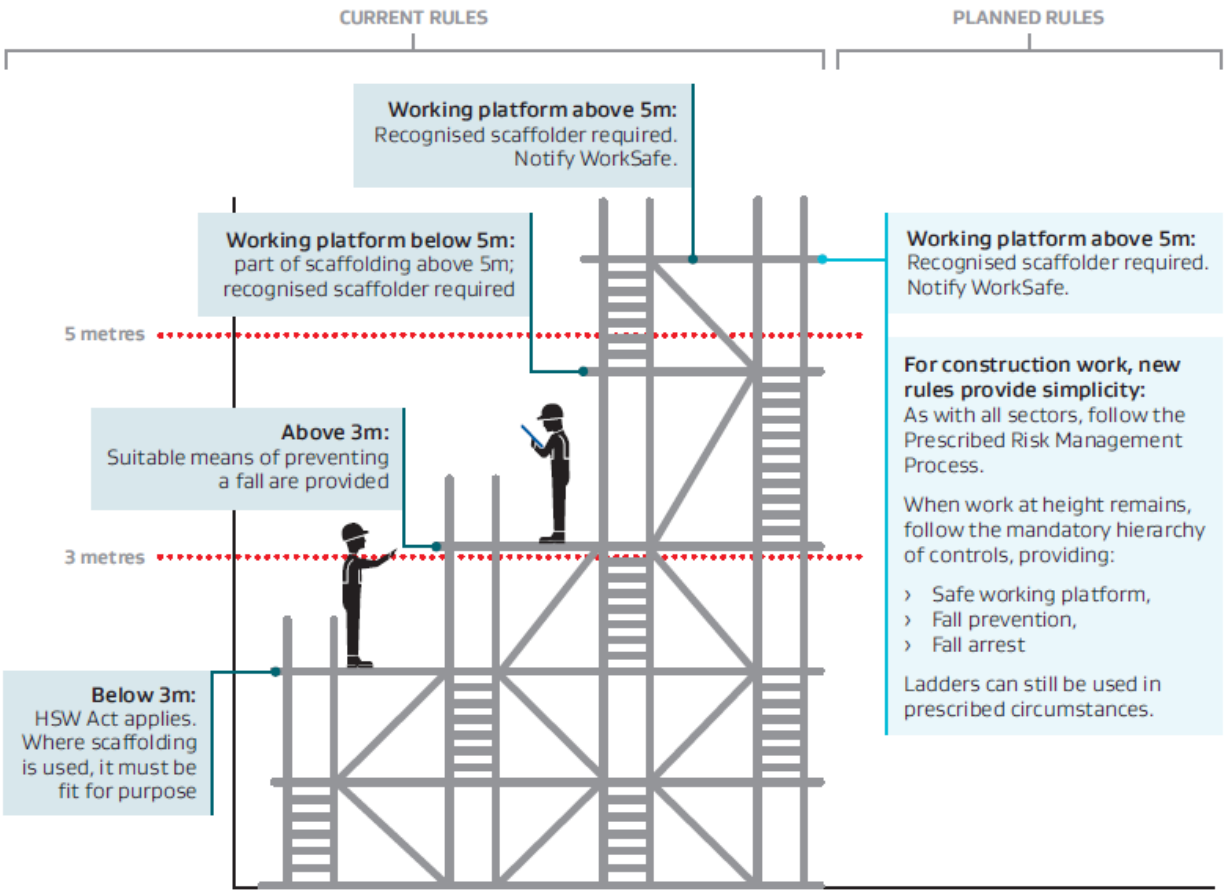
93 For construction work, which has the greatest amount of harm from falls, I propose businesses must follow a hierarchy of risk controls to support safe work at height, with specified low-risk circumstances when work from a ladder is permitted. These changes will lead to more proportionate risk management.

94 I propose aligning the thresholds for requiring when a qualified scaffolder is needed to construct and inspect a scaffold, and when to notify WorkSafe, setting both at when the work surface is over five metres in height.

95 The changes from the current rules, to those that will be in place for different heights are summarised in **Figure 6** below, with improved clarity with obligations at 5 metres.

[9] Electrical safety is primarily covered by requirements under the *Electricity Act 1992*.

Figure 6: Current and proposed rules for work at height in construction work



96 I propose modernising the qualifications for scaffolding construction and inspection to reflect current industry practice, by moving to four classes of scaffolding licensing for high risk work and adding an inspection-only certificate.

97 Scaffolders currently have to hold certificates of competence under the HSE Regulations. It is sensible to base all licensing arrangements and processes under the HSW Act on the modernised high risk work licensing in the Australian Model Regulations, rather than using the outdated certificate of competency processes from the HSE Regulations. Cabinet recently agreed to apply the Australian licensing processes to a new licensing regime under the HSW Act for refrigerant technicians, introduced to support a safe transition away from harmful refrigerant gases and to meet international obligations [DEV-Min-19-0105]. I propose that scaffolders also hold a high risk work licence, incorporating the same licensing processes being introduced for refrigerant technicians. I propose to consult on the details on the high risk work licensing process for scaffolders as part of the exposure drafts of the regulations.

More proportional risk-based controls for excavation work

98 I propose that working on excavations will require:

98.1 proportional risk management, with the Prescribed Risk Management Process to be followed for specific risks associated with all excavation work, regardless of depth

98.2 the business with management or control of the worksite to check for underground services, to address the risks of harm and economic disruption from line strikes.

99 Reflecting that there is a higher risk at depths greater than 1.5 metres, I propose to retain and revise existing controls for shoring (controls that prevent an excavation from collapsing), fencing and notification to WorkSafe for excavations at this threshold, where this is construction work. I propose to strengthen the competency requirement for determining whether the walls of an excavation are of good standing, and therefore whether shoring is required to prevent ground collapse.

Limited exclusions from coverage where there is very low risk or existing protections

100 The HSW Act defines plant as including any machinery, vehicle, vessel, aircraft, equipment, appliance, container, implement, or tool, including any component and anything fitted or connected to them. I propose that the proposals in this paper follow the Australian Model Regulations and do not apply to hand-held tools that are manually powered, as the risk is very low and the existing primary duties in the HSW Act will still apply, in a proportionate way.

101 The definition of plant in the HSE Act includes vessels and aircraft. Because comparable Rules under transport legislation already provide a level of protection, I propose to exclude from these proposals:

101.1 vessels and plant on board vessels regulated by Maritime Rules, except for processing machinery and material handling equipment, to avoid unnecessary duplication and disparities with protections for work onshore

101.2 non-military aircraft and plant on board aircraft.

102 Corresponding exclusions will apply to the upstream requirements to modify plant to address identified hazards and for guarding and safety features. These requirements will still apply to vessels that are not covered by Maritime Rules, however, and to processing machinery and material handling equipment such as winches and augers on board ships. The requirements on upstream businesses to share information across the supply chain will also still apply. I consider this approach achieves the best balance between providing equivalent protections to workers on shore and those working off shore, while not being overly onerous for duty holders under both the HSW Act and transport legislation.

103 The provisions will apply to all plant that is powered or self-propelled, including railway vehicles and vehicles operated on public roads under Land Transport Rules. This is a different approach to the one adopted in Australia, which doesn't apply to vehicles operated on public roads. We propose this approach to alleviate risks of inadvertent loopholes and deliver consistency in levels of worker protection, irrespective of whether the vehicle is operating on public or private roads. For railway vehicles and vehicles operated on-road, we will work with the Ministry of Transport and Waka Kotahi/New Zealand Transport Agency to ensure that the required protections do not conflict with or contradict requirements under Land Transport Rules, which will at times take precedence in what they require (eg regarding protecting passengers in vehicles on the road). We will consult on any necessary modifications to achieve this through the exposure draft phase of progressing Plant and Structures regulations.

104 The proposed regulatory requirements are not always appropriate for plant and structures of the Armed Forces because of its specialised nature and the unique role of the New Zealand Defence Force. I propose that the regulatory requirements for general plant, mobile plant and upstream duty holders do not apply to plant and structures of the Armed Forces, such as military aircraft and warships, where a Defence Force Order issued under section 27(2) of the *Defence Act 1990* – that complies with the regulations, to the extent practicable – provides an alternative compliance pathway.I have consulted with the Minister of Defence on this proposal.

105 I propose that the current exemptions for high-risk plant on ships and aircraft, including military ships and aircraft, will continue to apply.

Delivering an anticipated reduction in NZ's work-related harm of approximately 20%

106 Over time, the regulatory proposals will work together to improve the quality of New Zealand's stock of workplace plant and structures. Through better understanding and management of risks and the controls to address those risks, they will work to improve New Zealand's work practices when working with plant, structures, at heights and on excavations.

107 MBIE's indicative estimates, based on comparable Australian statistics, are that the proposals are expected to reduce fatalities and serious injuries by approximately 20 percent, equating to benefits of approximately $43 million per annum in lives saved. This assessment is based on:

107.1 general agreement across submitters that the costs of the changes will be offset by commensurate benefits

107.2 the effectiveness of comparable regulations in Australia on observable rates of work-related harm

107.3 the current scale of the harm involving plant and structures (79 percent of work-related fatalities from injury), which provides significant potential for improvement.

Consulting on exposure drafts of regulations and underpinning components

108 Should Cabinet agree to these proposals, I propose to consult on exposure drafts of the regulations, given the broad application across New Zealand workplaces for many proposals, the highly technical nature of others, and to maintain the high level of stakeholder interest and confidence in this process.

109 In conjunction with the exposure drafts, I propose to consult on a range of underpinning components necessary to give effect to these regulatory provisions, including regulatory and infringement offences and fines, transitional arrangements, and administrative fees, as outlined below. I will then seek Cabinet approval of any final decisions required.

Consistency in regulatory and infringement offences and penalties

110 The proposed requirements for scaffold licences and high-risk plant registration will be authorisations under the HSW Act. Not having these authorisations where required will be an offence under the HSW Act, carrying a maximum penalty for individuals of $20,000 and for non-individuals such as corporates of $100,000. For other regulatory proposals in this paper, the HSW Act provides for regulatory offences with fines set in regulation up to a maximum of $50,000, aligning with comparable regimes.

111 For consistency with existing HSW regulations, I propose that appropriate regulatory offences and penalties for relevant provisions in this paper are identified and set in accordance with the framework agreed by Cabinet in September 2015, outlined in **Appendix Three** [CAB-15-MIN-0118 refers]. Regulatory offences are Category 1 offences and will be subject to Judge-alone trial at the District Court. Setting distinct fine maxima for different offences and for different classes of offender recognises that the consequences of contravention of regulatory requirements can vary widely in seriousness and impact.

112 The HSW Act allows for regulations to specify particular offences as infringement offences, effectively 'on-the-spot fines'. Infringement offences are typically those where the conduct relates to minor or less serious matters, comprises actions or omissions that involve straightforward issues of fact, and warrants more than a warning, but less than the full sanction of criminal law.

113 For consistency with existing HSW regulations, I propose that appropriate infringement offences for relevant regulatory provisions in this paper are identified and set in accordance with the approach for identifying HSW infringement offences agreed by Cabinet in September 2015, and set out in **Appendix Three** [CAB-15-MIN-0118]. MBIE developed this approach in accordance with Ministry of Justice and Legislation Advisory Committee guidelines and in line with the principles applied by the various Australian jurisdictions when adopting the Model Law.

114 The corresponding infringement fee framework under the HSW Act was agreed by former Ministers (Workplace Relations and Safety and Justice) in February 2016, outlined in **Appendix Three** [LEG-16-MIN-0012]. In setting infringement fees, consideration is given to the potential for harm caused by the offending, the appropriateness of the penalty for the target group, and the proportionality of the fee with other comparable offences.

115 MBIE will identify and develop appropriate regulatory and infringement offences and penalties based on these frameworks and Ministry of Justice guidance, for further consultation with relevant stakeholders.

Consulting on transitional arrangements

116 MBIE will consult on transitional arrangements with stakeholders, so that the detail of these arrangements can be refined before I seek final policy decisions. Transitional arrangements will generally be applied to provisions where compliance relies on:

116.1 duty holders implementing health or safety measures to meet updated or new requirements that cannot reasonably be achieved in the usual 28 days between the regulations being passed and coming into force

116.2 meeting training requirements where extra time will be needed either for the training to be developed and available, or for people to have completed it

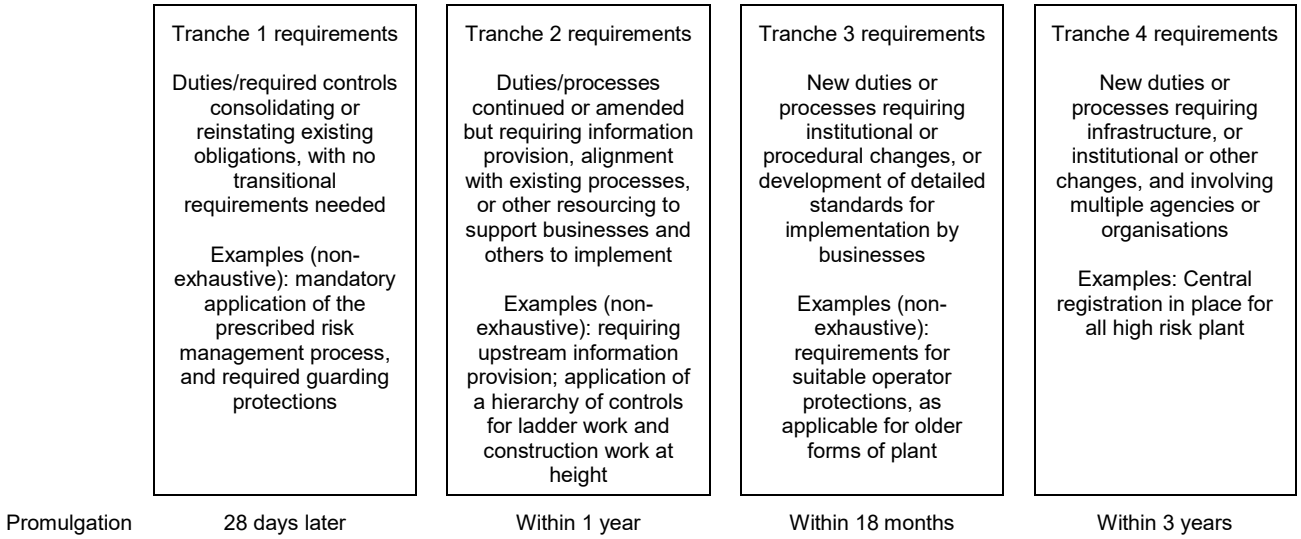
116.3 developing the underpinning infrastructure, such as high-risk plant registers, including any new specialist or expert capacity required.

117 Implementation will be in tranches over an extended period. Feedback about transitional arrangements at a general level was sought during the public consultation process. The

proposals that received the most commentary on the need for an extended transition time were for the high-risk plant registers, including the need for specialist expertise.

118 Indicative timings are outlined in **Figure 7** below and will be finalised in consultation with stakeholders. I anticipate the majority of the changes to be in place within 18 months of the regulations being passed, likely much sooner for newer forms of plant, relative to older forms of plant requiring capital upgrades. A longer time period of up to three years may apply for a small number of requirements, for example where implementing extensive, large-scale supporting infrastructure. In finalising the implementation phasing, MBIE will balance the implementation demands with the needs of workers exposed to the risks.

Figure 7: Indicative implementation timeframes



Ensuring effective implementation

119 The package of regulatory proposals will be implemented through new regulations under the HSW Act, supported by WorkSafe through awareness campaigns, educational tools and guidance to inform and educate businesses about what they will need to do.

120 Effective implementation will require WorkSafe to develop the following:

120.1 organisational training and internal policy development

120.2 specialist technical expertise

120.3 extensive supporting guidance, education and stakeholder communication

120.4 necessary infrastructure, including registers of high-risk plant designs and items

120.5 required operational processes, eg for audits, reviews, recognitions, and fee charging.

121 In interactions with businesses, WorkSafe usually favours engagement and education when regulations are new. WorkSafe is more likely to use enforcement approaches when new regulations re-state or update existing requirements that businesses should already be

complying with, or businesses are still not complying even after they have had time to become familiar with new regulations.

122 MBIE and WorkSafe will develop a monitoring and evaluation plan that looks at how the regulations are working, including how effective the regulator is, how businesses are responding to the requirements, and whether they result in reduced harm. This will include an evaluation report to assess the first five years of the regulations.

123 MBIE is confident from its extensive consultation that the risks of implementing the changes, as adjusted for stakeholder feedback, are modest and can be effectively managed. The proposals have been robustly tested through this process of consultation, with a series of refinements made in response to stakeholder feedback. The main risks that have been identified are:

123.1 materially lower benefits and/or higher costs from the proposals than originally anticipated

123.2 implementation readiness risks, eg due to insufficient lead time for businesses

123.3 risks of adverse consequences caused by selected changes.

124 MBIE will mitigate these risks by consulting on sufficient implementation timeframes for introducing the changes and as part of ongoing monitoring and evaluation. Consultation proposals were developed with the demands of implementation in mind, with the proposed changes closely based on Australian Model Regulations, adapted for New Zealand's circumstances. This has ensured:

124.1 compatibility with the HSW Act, which was based on the Australian Model Law

124.2 a focus on risks with long standing mandatory requirements, such as those set by the Machinery Act and PECPR Regulations

124.3 requirements that are already well-developed and tested in Australian jurisdictions

124.4 alignment with Australian practices, as a country with comparable risks in health and safety at work

124.5 ease of benchmarking, as informed by Australian case law, experiences and developments over time.

Financial Implications

125 There will be financial implications associated with WorkSafe's implementation of the new regulations. This section outlines the current view of likely costs and funding options.

126 Free and frank opinions, Confidential advice to Government Once MBIE has undertaken the further consultation needed to refine the fees, transitional arrangements and implementation timeframes for the new regulations, and to fully determine the expected costs, I propose to:

Free and frank opinions, Confidential advice to Government

127 The general funding arrangements of the health and safety at work system are:

127.1 Operational expenditure for the regulator is primarily cost recovered from the Health and Safety at Work levy (the HSW Levy), which is a general charge on all businesses, with specific services (e.g. licensing/registration) charged to users of those services through fees

127.2 Capital expenditure is provided up-front by the Crown, with ongoing depreciation expenditure for asset replacement funded through fees and the HSW Levy.

128 WorkSafe has estimated the up-front operational costs for the proposals, Confidential advice to Government, Free and frank opinions

Table 2: Indicative WorkSafe funding needs

Indicative costs	Activity	Funding source	Annual costs for first 4 years	Outyears
Operating	General implementation costs eg additional staffing costs, practice tools, guidance, promotional campaigns	HSW levy – reprioritised from within existing baseline	$1 million	-
Capital	Upfront capital costs for new registers of high-risk plant items and designs	Confidential advice to Government, Free and frank opinions		
	Annual depreciation and operating costs			

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Confidential advice to Government, Free and frank opinions

132 The decisions sought from Cabinet at the present time, and the planned further consultation, do not pre-determine when the regulatory changes would come into effect, which will be agreed in-principle in February 2022, Confidential advice to Government, Free and frank opinions

133 Supplementary cost information and MBIE's recommended cost recovery approach is provided in the Stage One Cost Recovery Impact Statement in **Appendix Four.**

Legislative Implications

134 New regulations under the *Health and Safety at Work Act 2015* will be required to give effect to the regulatory proposals in this paper. They will be based on the Australian Model Regulations, adapted for New Zealand's specific circumstances and adjusted for stakeholder feedback.

135 They will replace the following regulations, which will need to be revoked:

135.1 The *Health and Safety In Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999*

135.2 The *Amusement Device Regulations 1978*

135.3 Parts 2, 3, and 4 of the *Health and Safety in Employment Regulations 1995* that relate to plant, work at height and on excavations.

136 The new regulations will also modernise and replace the obligations contained in the *Machinery Act 1950*, which was repealed by the HSW Act on its coming into force in 2016, in anticipation of this package of regulatory proposals.

137 Where appropriate, Safe Work Instruments will provide for detailed and technical matters and standards that change relatively frequently or are industry specific. These are a secondary legislative instrument provided for by the HSW Act and only have legal effect where specifically referred to in regulation. WorkSafe develop and consult on these instruments and I approve them.

Impact Analysis

Regulatory Impact Statement

138 A Regulatory Impact Statement (RIS) has been prepared and is attached to the Cabinet paper as **Appendix Five**. A joint MBIE/Treasury panel has reviewed the RIS and concluded that the information and analysis contained within the RIS meets the quality assurance criteria.

139 The package of changes recommended largely replace and modernise existing controls, or implement incremental change. Only a small proportion are wholly new, moderating overall costs for duty holders as a result. Where regulatory proposals are new, they are largely clarifications of what is reasonably practicable for businesses to do to meet their primary duties in the Act.

140 The proposals include adjustments to Australian Model Regulations made in response to stakeholder feedback, to overcome practical challenges, improve cost effectiveness, and to retain what is already working well in New Zealand, particularly for high-risk plant.

141 Costs for businesses are anticipated to be modest overall. In many cases these costs will be operational (whether to meet additional training, inspection or engineering needs, or registration or documentation requirements) and minor. Comparatively costs are expected to be marginally more significant for:

141.1 the agricultural sector, through proposed changes to operator protections (eg in the form of crush protection devices, at a purchase cost of approximately $1,000 per device)

141.2 the manufacturing, retail, warehousing and transport sectors, through new requirements on businesses to manage the risks of collision with pedestrians and objects (eg in the form of traffic management systems, or proximity warning devices, which typically vary in cost from approximately $300 to $5,000)

141.3 businesses who need to undertake resulting capital equipment upgrades, where plant is not adequately safe in its design or is not able to be upgraded to reach an acceptable standard.

142 Benefits are anticipated to vastly outweigh expected costs, with benefits of $43 million predicted from lives saved alone. Transition timeframes will undergo further consultation, to allow more detailed assessment of the way changes can be appropriately phased, given the transition costs they will involve.

143 A Stage One Cost Recovery Impact Statement outlining the high level approach to fees is attached as **Appendix Four**.

Climate Implications of Policy Assessment

144 The Ministry for the Environment has been consulted and confirms that the Climate Implications of Policy Assessment requirements do not apply to this proposal as the threshold for significance is not met.

Population Implications

Pronounced benefits expected for Māori, Pasifika, migrant, and male workers

145 The high level of harm from working with plant and structures is not equally distributed across ethnicities or gender. As groups who disproportionately tend to suffer work-related harm, Māori and males are expected to benefit more from the changes relative to the population at large, with a corresponding closing of the gap in poor health and safety outcomes between ethnicities and genders expected as the level of harm reduces.

146 Māori workers are over-represented in high-risk sectors and, based on worker exposure surveys, are more likely to be exposed to certain physical risks at work. Even accounting for the difference in sector representation, Māori are over-represented in work-related harm. Standardised for industry, 13.5 per 1,000 Māori workers suffered an acute injury that caused them to miss more than a week from work, compared to 9.6 for non-Māori in 2018.

147 Workplace harm is particularly prevalent amongst males. Between 2015 and 2019, 288 of the 318 people (91 percent) who died in an incident involving plant and structures were male.

148 Benefits are also expected to be particularly significant for migrant and Pasifika workers. Pasifika workers are disproportionately more likely to work in high-risk sectors, such as in trades work or as labourers. The clearer, modernised requirements are expected to help address risks in the sectors they work in and assist in overcoming barriers to raising concerns, by providing greater clarity in what process should be followed. Migrant workers have consistently raised that cultural differences, including challenges for speakers of other languages, have lessened their confidence in raising concerns. Impacts on particular groups will continue to be monitored following the introduction of the changes.

Impacts on rural communities will continue to be carefully considered

149 People in rural communities will be affected by the changes, due to the prevalence of harm in agricultural work, and extensive use of plant and structures across the agricultural sector, and the existing regulatory exclusions, most notably, the exclusion of quad bikes and other vehicles under 700 kg from rollover protections. MBIE has adjusted aspects of original proposals in response to feedback, and some of these changes will mitigate costs for those affected, including in rural communities.

150 The equipment most referred to in connection with farms and other rural workplaces was quad bikes, but there was also extensive reference to tractors and harvesting and other agricultural equipment associated with it. Tanks and silos and other storage and materials handling equipment were also noted as significant areas of risk for rural workplaces.

151 MBIE is confident that removing the existing exemption from the obligation to provide operator protective devices will provide an important first step for further engagement with rural communities on an agreed level of protection for people using quad bikes in their work.

152 Another significant source of harm on farms and rural workplaces is collisions, particularly between people and vehicles. The new requirement to manage the risk of collisions will provide impetus for developing guidance for avoiding collisions on farms and other rural settings, which will require different controls than urban workplaces.

153 Guarding of transmission machinery and moving parts on mobile plant and other equipment such as irrigation equipment, shearing, milking and other equipment, pumps etc, will also receive more attention under the regulations. As with the other areas of risk, MBIE expects the new regulations will lead to a significant reduction of harm over time.

154 Consultation with rural communities confirmed that farmers, as with other smaller businesses, often find it difficult to interpret regulatory requirements and adjust plant and structures to meet them, or to make purchasing decisions that they can be confident will mean they meet regulatory requirements. This was noted as a particular concern for small farms, and MBIE received submissions that farmers would welcome suppliers being more involved

in ensuring that equipment supplied to farms meets guarding, access and other safety and health requirements. This approach was felt to be more efficient and effective where plant and structures are supplied to multiple farmers in a district or beyond.

155 MBIE expects that the upstream duty requirements will support shifting the management of risks to earlier in the design process. This will help ensure that the quality of plant available increases over time, and make it easier farmers and their suppliers to comply with their existing and new requirements as PCBUs.

156 MBIE will continue engaging with the rural community through the exposure draft stage.

Human Rights

157 These proposals are not inconsistent with the *New Zealand Bill of Rights Act 1990* and the *Human Rights Act 1993*.

Consultation

158 The following agencies have been consulted on these proposals: Ministries of Education, Social Development, Defence, Transport, Justice and Health; Ministries for Women, Culture and Heritage, Primary Industries, Housing and Urban Development, Environment, Pacific Peoples, Department of Prime Minister and Cabinet, Internal Affairs, and Corrections; Treasury, Te Puni Kōkiri, Office of Ethnic Communities; NZ Police, New Zealand Customs Service; WorkSafe New Zealand, Civil Aviation Authority, Maritime NZ, Accident Compensation Corporation; Tertiary Education Commission; Fire and Emergency New Zealand; Waka Kotahi/NZ Transport Agency, Environmental Protection Authority, and Kāinga Ora – Homes and Communities. Parliamentary Counsel Office has been informed of these proposals.

159 The HSW Act requires consultation with all appropriate persons and organisations before I make any recommendations for regulations. In 2019/20, MBIE released a public consultation document and held 16 public and sector-focused meetings across New Zealand, from Auckland to Invercargill, and met with over 20 organisations and individuals with an interest in the proposals. MBIE received 172 submissions from organisations, businesses and individuals, representing a range of interests and sectors. Submitters generally endorsed the analysis of the risks and issues, with a particular focus on poor quality imported plant, and deficient guarding, maintenance and risk management practice. There was concern about insufficient health and safety competency, and access to advice.

160 There was broad support for the proposals and the clarity they will provide, and broad acceptance that the Australian Model Regulations offer the best foundation for the regulatory obligations. Applying the Prescribed Risk Management Process for working with plant, at height and on excavations was supported by the clear majority of submitters. A few submitters opposed the proposals generally, expressing instead a preference for relying on the general risk management process in the HSW Act to identify and mitigate risks.

161 Submitters frequently commented that the proposals were consistent with their status quo in practice, especially those with responsibility for high-risk plant. This was not the case for all submitters, with some in the agriculture and forestry sectors noting concern about the implications for the use of aging plant. I consider that either the proposals have been adapted

sufficiently to mitigate these concerns, or that the harm is such that these requirements are necessary to address the risk.

162 There was resistance to the introduction of some mandatory controls instead of continuing reliance on approved codes of practice and guidance from the agriculture and fishing sectors in particular. To address these concerns, MBIE and WorkSafe will consult further on my behalf with:

162.1 the commercial fishing sector, Ministry for Primary Industries, Fisheries NZ, Maritime New Zealand and the Ministry of Transport on transitional provisions and addressing gaps in the regulatory coverage of plant on board vessels

162.2 Federated Farmers, other agriculture sector peak bodies, and the Ministry for Primary Industries on transitional provisions and developing guidance for mobile plant used in the sector.

163 There was resistance to aspects of the proposals for high-risk plant from some larger manufacturers and processors, the forestry sector, and model engineering clubs. To address these concerns, MBIE and WorkSafe officials will consult further on my behalf with:

163.1 operators of large scale industrial pressure equipment – to further refine the arrangements for them to be recognised to maintain their own records of plant

163.2 forestry sector groups and the Ministry for Primary Industries – on transitional arrangements, guidance for excavators used to lift loads, and developing inspection regimes for steep-slope forestry harvesting equipment

163.3 the Department of Internal Affairs, Local Government New Zealand, and the New Zealand Operators of Amusement Devices – on refining the territorial authority permitting requirement for higher risk portable amusement devices

163.4 MEANZ – on arrangements for meeting audit requirements to achieve recognition from IANZ as an inspection body under the regulations.

Communications

164 As well as proactively releasing the Cabinet paper as outlined below, I will release an exposure draft of the regulations for public consultation, together with a discussion document seeking stakeholder feedback on the remaining underpinning components.

Proactive Release

165 I intend to release the Cabinet paper proactively in whole within 30 business days, subject to redaction as appropriate under the *Official Information Act 1982*.

Recommendations

The Minister for Workplace Relations and Safety recommends that the Committee:

1 note that risks from working with plant and structures and doing hazardous work at height and on excavations cause a significant proportion of New Zealand's work-related harm;

2 agree to new regulations under the *Health and Safety at Work Act 2015* (the HSW Act) to give effect to Recommendations 4 to 40 below, that:

2.1 modernise and fill gaps in the existing regulatory obligations for risks arising from working with plant and structures and doing hazardous work at height and on excavations;

2.2 are placed on the appropriate Person Conducting a Business or Undertaking (PCBU) and provide a means to meet their primary duties of care in the HSW Act;

2.3 are based on Chapters 4, 5 and 6 of the Australian Model Regulations, adapted for New Zealand's circumstances, and adjusted for stakeholder feedback from public consultation, and;

2.4 replace outdated and prescriptive requirements saved under the HSW Act;

3 agree to revoke the following regulations saved under the HSW Act:

3.1 the *Health and Safety In Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999*

3.2 the *Amusement Devices Regulations 1978*

3.3 parts 2, 3, and 4 of the *Health and Safety in Employment Regulations 1995* relating to plant, work at height and on excavations;

4 agree to apply the Prescribed Risk Management Process in Regulations 5 to 8 of the *Health and Safety at Work (General Risk and Workplace Management) Regulations 2016* to health and safety risks associated with plant, mobile plant, all work at height, and all work on excavations;

Plant

5 agree to regulatory requirements for general plant that modernise and replace outdated and prescriptive requirements in the *Health and Safety Employment Regulations 1995;*

6 agree that PCBUs must ensure that plant has appropriate guarding, safe maintenance and cleaning, and safe operational controls, emergency stops and warning devices;

7 agree that PCBUs must ensure that the health and safety risks of plant are managed throughout the life of the plant through:

7.1 inspection whenever plant is altered, to ensure risks are monitored

7.2 using a competent person whenever plant is altered, maintained, inspected or tested

7.3 preventing unauthorised alterations or unintended use that is not contemplated by the plant's design and which compromises health and safety as a result;

8 agree that PCBUs must meet additional controls that ensure the specific risks from plant used for lifting or suspending loads and from laser equipment are managed;

Mobile plant

9 agree to regulatory requirements for mobile plant that modernise and replace requirements in the *Health and Safety Employment Regulations 1995* for roll-over protection and seatbelts, while removing exemptions for quad bikes and agricultural use of tractors;

10 agree that PCBUs must manage the specific risks from mobile plant by:

10.1 ensuring a suitable combination of devices to protect the operator

10.2 ensuring no passengers unless they have protections at least as high as that provided to the operator

10.3 managing risks of collision;

11 agree that PCBUs must meet additional controls that ensure the specific risks from forklifts are managed;

Upstream duties on designers, manufacturers, importers, suppliers, installers

12 note that PCBUs who design, manufacture, import, supply, install, construct or commission plant and structures to be used at a workplace (upstream PCBUs) have a significant influence on ensuring safe plant and structures in workplaces, and require further clarity on how to best meet their primary duties of care;

13 agree that upstream PCBUs must:

13.1 provide or take reasonable steps to obtain information about a plant's design when it is for use in a workplace

13.2 use that information when manufacturing, inspecting or testing, or installing, constructing or commissioning the plant;

14 agree that PCBUs must provide designers with information about reasonably foreseeable risks and hazards at the workplace when they are ordering new designs of plant;

15 agree that designers, manufacturers and importers of plant must, where hazards are identified:

15.1 take action to manage risks and hazards, and

15.2 consult with the appropriate upstream PCBU where possible;

16 agree that suppliers of secondhand plant to be used at a workplace, unless supplied "as is", must, so far as is reasonably practicable, identify faults in the plant and give that information in writing to the person being supplied the plant;

17 agree that designers of plant to be used at a workplace must meet equivalent requirements for guarding and safety features as those placed on PCBUs for plant;

18 agree that manufacturers of plant to be used at a workplace must ensure that the plant is manufactured and inspected having regard to the information the designer of the plant is required to provide;

19 agree that installers, constructors, and commissioners of structures to be used at a workplace, which are not covered by the *Building Act 2004*, must have regard to information provided by upstream PCBUs or the instructions provided by a competent person;

20 agree that PCBUs must provide designers with information about reasonably foreseeable risks and hazards at the workplace when they are ordering new designs of structures not covered by the *Building Act 2004*;

High-risk plant

21 agree that the provisions of the *Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999* and the *Amusement Devices Regulations 1978* be revised and consolidated into a new single set of regulatory obligations for high-risk plant, incorporating components of the Australian Model Regulations;

22 note that the new regulations for high-risk plant will revise and retain the existing inspection and accreditation processes, while:

22.1 including relevant new types of plant, and

22.2 improving the consistency of verification of design and inspection practices;

23 agree to introduce new duties for high-risk plant, as prescribed under section 12 of the HSW Act, requiring:

23.1 PCBUs to ensure they only use or supply high-risk plant that has its design verified and registered;

23.2 the registration of verified designs of high-risk plant with WorkSafe New Zealand, which will include all plant currently covered by the regulations referred to in recommendation 21 and:

23.2.1 steep-slope mechanical forestry harvesting equipment

23.2.2 elevating work platforms and other mechanical access equipment

23.2.3 certain categories of portable cranes, and other large scale lifting equipment

23.2.4 concrete pumping/placing booms and hydraulic arms

23.2.5 hydraulic vehicle hoists

23.2.6 scaffolding, edge protection, and proprietary construction support systems;

23.3 the registration of specified items of high-risk plant with WorkSafe, with authorised inspection bodies maintaining inspection records on the register, and that this will include all plant currently covered by the regulations referred to in recommendation 21 and:

23.3.1 steep-slope mechanical forestry harvesting equipment

23.3.2 elevating work platforms and other mechanical access equipment

23.3.3 certain categories of portable cranes, and other large scale lifting equipment

23.3.4 concrete pumping/placing booms and hydraulic arms.

24 agree that WorkSafe may authorise operators of large-scale bespoke pressure equipment systems to maintain their own registers of such plant as an alternative to the requirements in recommendation 23;

25 agree that territorial authority permits be required for higher-risk portable amusement devices only, instead of for all types of amusement devices;

Work at height

26 agree to regulatory requirements that modernise and replace the requirements in the *Health and Safety in Employment Regulations 1995* for work at height, and that remove the exemptions for work at height below three metres and for agricultural work;

27 agree to modernise the definition of construction work based on the Australian Model Regulations to clarify where greater protections apply;

28 agree that PCBUs must follow a hierarchy of risk controls for work at height in construction work, with specified circumstances where work from a ladder is permitted;

29 agree that scaffolds with a work surface that is over five metres in height must be erected by a licensed scaffolder and notified to WorkSafe;

30 note that Cabinet earlier agreed to applying the high risk work licence and licensing process based on the Australian Model Regulations to new refrigeration, heating and air conditioning licences under the HSW Act [DEV-Min-19-0105];

31 agree to:

31.1 introduce the Australian Model Regulations high risk work licence for scaffolding construction and inspection, to replace the outdated certificate of competence in the *Health and Safety in Employment Regulations 1995*

31.2 move to four classes of scaffolding licences to reflect current industry practice, and to add an inspection-only licence;

Work on excavations

32 agree to regulatory requirements that modernise and replace the requirements in the *Health and Safety in Employment Regulations 1995* for excavations;

33 agree to retain and revise existing requirements for excavations in construction work at a depth of 1.5 metres for shoring, fencing and notification to WorkSafe;

34 agree that PCBUs undertaking excavations in construction work must have a competent person determine that the ground is stable, or have a suitable combination of benching, battering or shoring to prevent ground collapse;

35 agree to require the PCBU with site control to do what is reasonably practicable to identify underground services information;

Approach where other regimes provide protections

36 note that where transport Rules for aircraft, vessels, and road and rail vehicles already provide sufficient protection against work health and safety risks, the intent is that these Rules will be considered as meeting the proposed requirements, while vehicles used off road or on private land will be required to fully comply as they are not covered by transport Rules;

37 agree to the following exclusions from general plant requirements and upstream requirements to modify plant to address identified hazards and for guarding and safety features, as comparable Rules under transport legislation already provide a level of protection:

37.1 vessels and plant on board vessels regulated by Maritime Rules, except for processing machinery and material handling equipment, to minimise duplication while avoiding disparities with protections for work onshore

37.2 aircraft and plant on board aircraft;

38 note that the proposed regulatory requirements are not always appropriate for plant and structures of the Armed Forces because of its specialised nature and the unique role of the New Zealand Defence Force;

39 agree that the proposed regulatory requirements will not apply to plant and structures of the Armed Forces where a Defence Force Order, issued under s. 27(2) of the *Defence Act 1990*, provides an alternative compliance pathway;

40 note that current exemptions for high-risk plant on ships and aircraft, including military aircraft and naval ships, will continue to apply;

Regulatory and infringement offences and penalties

41 note that the framework for regulatory offences and penalties made under the HSW Act was agreed by Cabinet in September 2015 [CAB-15-MIN-0118];

42 note that the approach to identifying infringement offences under the HSW Act was agreed by Cabinet in September 2015 [CAB-15-MIN-0118];

43 note that former Ministers (for Workplace Relations and Safety and of Justice) agreed to the framework for applying infringement fines for regulations made under the HSW Act in February 2016 [LEG-16-MIN-0012];

44 note that MBIE will develop appropriate offences and penalties based on these frameworks, in line with Ministry of Justice guidance, for further public consultation;

Public consultation on exposure drafts of regulations and on remaining matters

45 authorise the Minister for Workplace Relations and Safety to undertake public consultation with affected parties on appropriate regulatory and infringement offences and penalties,

transitional arrangements, details of the high risk work licensing process for scaffolders, and administrative fees that give further effect to Recommendations 5 to 40 above;

46 invite the Minister for Workplace Relations and Safety to issue drafting instructions to the Parliamentary Counsel Office to give effect to the above Recommendations;

47 note that where appropriate, detailed or technical matters will be included in Safe Work Instruments, a secondary legislative instrument developed and consulted on by WorkSafe and approved by the Minister for Workplace Relations and Safety;

48 authorise the Minister for Workplace Relations and Safety to make decisions, consistent with the proposals in these Recommendations, on any issues that arise during the drafting process;

49 authorise the Minister for Workplace Relations and Safety to approve and release an exposure draft of the regulations and related commentary for public consultation;

50 note that any remaining policy decisions, including in-principle implementation decisions, will be sought from Cabinet in early 2022 following the public consultation process;

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Authorised for lodgement

Hon Michael Wood

Minister for Workplace Relations and Safety

Appendices

Appendix One: Current regulations for high-risk plant

Appendix Two: Illustrative good practice case studies

Appendix Three: Offences and penalties

Appendix Four: Stage One Cost Recovery Impact Statement

Appendix Five: Regulatory Impact Statement: Better Regulation of Plant, Structures and Working at Height

Appendix One: Current regulations for high-risk plant

1 High-risk plant is currently regulated under the *Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999* (PECPR Regulations) and the *Amusement Devices* Regulations *1978* (the Amusement Devices Regulations).

2 The PECPR Regulations are estimated to apply to more than 50,000 individual items of plant. They require the business that controls or owns an item of plant to hold a current certificate of inspection for that item. Inspection bodies are accredited by International Accreditation New Zealand (IANZ), and inspection personnel are certified by the national Certification Board for Inspection Personnel (CBIP).

3 Before an item of plant can be given a certificate of inspection it must be "design verified". This is effectively a process of independent peer review of each design to ensure that it meets the standard to which it has been designed. Verification involves a range of engineering specialties – principally mechanical, but also structural, petrochemical, geothermal, chemical and other disciplines.

4 Design verification is a long-accepted feature of good engineering practice, and New Zealand and overseas legislation has included requirements for it in building, health and safety and other regimes for several decades. It has long been used as a prerequisite to indicate fitness for purpose before registering a boiler, crane or other item of high-risk plant, and more recently its use has been broadened by Australian and other overseas regulations. The process is particularly relevant when serially produced equipment10 is being imported from countries without such processes, or where high-risk plant is being sold 'as is' and recommissioned to perform work for which it was not originally designed.

5 Under the Amusement Devices Regulations, there are about 345 fairground rides, winched bungy operations and a wide range of other mechanical amusements that are registered with WorkSafe. These regulations require two yearly registration of individual items of plant with WorkSafe, and a permit from the relevant territorial authority each time the device is set up to offer rides to the public.

6 Before an amusement device can be registered by WorkSafe, it must be inspected and certified by a Chartered Professional Engineer (CPEng). To issue a permit for a registered device, the territorial authority must be satisfied that the device is properly assembled and sited, and is used in accordance with any specified permit to operate criteria. Model railway and steam engine clubs that carry passengers have been exempt from the requirement for a certificate from a CPEng since an amendment to the regulations in 2011. Instead, under a system of Model Engineering Association of New Zealand Incorporated (MEANZ) accredited inspections, they may be registered after an audit by a competent person from another club.

[10] The manufacture of goods in large quantities, often using standardised designs and assembly-line techniques.

Appendix Two: Illustrative good practice case studies

Good practice for maintaining plant

Now

Stakeholders raised poor maintenance as a common contributor to harm from plant. New Zealand businesses can often push the boundaries of their plant's operational life, resulting in the continued use of machinery, for example, components designed to fit tightly become loose fitting over time. Currently there are no regulations clarifying what maintenance standards that businesses should meet. Inspectors can use enforcement tools (such as notices) if they see poorly maintained plant, but must use their judgement about when the plant has reached an unsafe state in order to do so.

For example, a ram used to push pipes into an underground space has a locking mechanism to keep it safely retracted while the next pipe is being loaded. Wear may cause the mechanism to become loose. If it fails, the ram will be unexpectedly released and could injure the worker preparing the pipes.

Future

Regulations would require businesses to ensure that:

- maintenance, inspection and testing of plant is carried out by a competent person
- maintenance, inspection and testing of the plant is carried out with regard to manufacturer's recommendations, so far as is reasonably practicable, or otherwise in accordance with recommendations from a competent person.

This would make clear for businesses that they should do regular proactive maintenance on plant in line with manufacturer's recommendations. In the example above, this could include replacing parts of the pipe-loading ram before they have exceeded the manufacturer's specified tolerance for wear. Inspectors would reinforce this requirement in their interactions with businesses. It will be easier for inspectors to raise concerns about maintenance before plant has reached an unsafe state where it could injure someone.

Good practice for work at heights

A large national fuel company regularly constructed new petrol stations. To build the canopy covering the forecourt, workers first build the columns to support the canopy. Workers then use a combination of scaffolding, elevating work platforms and harnesses to complete the roof support structure and install the roof, and the lights and other infrastructure. Work at height is needed for several weeks.

The business changed this whole process after thinking through whether it could eliminate the need to work at height altogether. Through careful planning, the business discovered it can complete the entire work to build the canopy roof support structure and install the lights and other infrastructure on the ground. The canopy is then lifted into place with two cranes. As a result, the risk from working at height has been substantially reduced, to only a day's work to secure the canopy to the columns.

The prescribed risk management process reinforces that businesses should first consider how to eliminate risks – just like the fuel company did – and if risk remains, manage it with the most effective controls possible.

When work at height in construction cannot be avoided, the specific construction hierarchy of controls will require businesses to start by considering the safest controls for work at height.

Good practice in the design and use of lifting plant

Now

New Zealanders are good at finding new ways to solve problems by modifying equipment they already have. Unfortunately, if not well thought through, this can lead to serious problems.

For example, a company carrying out bridge strengthening work created their own solution to give workers access to the underside of the bridge. Personnel and heavy equipment were lowered over the side of bridge in a specially designed cage, using an excavator. However neither the designer nor the company properly considered the risks involved such as the excavator tipping over, or the amount of weight which would destabilise the excavator.

A WorkSafe inspector issued notices to stop this dangerous work.

Future

- Businesses with control of the plant would be required to:
    - use the prescribed risk management process (PRMP) to manage the risks of plant
    - use plant only for the purpose for which it is designed, unless they have determined (with help from a competent person) that the proposed use didn't increase the risk to health or safety
    - when lifting people or things, use plant specifically designed for this purpose, so far as reasonably practicable, unless the plant to be used instead wouldn't increase the risk.
- Designers would be required to provide information to the manufacturer (who would pass it on down the supply chain) about safe use of plant.

Applying the PRMP, the PCBU considered using scaffolding instead of the excavator, however scaffolding needed to be erected from the ground which was not practicable. It was decided a crane from the river bank would be more appropriate, with workers harnessed into a person cage, and the crane operator would work within the load limits, and follow safe operating information.

Good practice when using high-risk plant

Now

Many log haulers used in New Zealand are decades old, and some are in poor condition. Businesses are guided to have a regular inspection of this equipment, however parts of the structure and machinery are not covered in these inspections. As critical parts age they may not be able to withstand the forces placed on them. Integral components like shackles have been known to fail when worn from age. When this occurs, haulers have sometimes collapsed from the force of pressure the plant has been put under.

Future

As 'high-risk plant', haulers will be required to be:

- of a registered design and registered as an item of plant with WorkSafe
- regularly inspected by a qualified person, ensuring improved maintenance of haulers, and replacement of worn plants before they fail
- reported to WorkSafe if there is a near-miss incident involving a hauler, making it easier for WorkSafe to identify patterns of risk and potential harm.

WorkSafe will follow up on haulers that are not inspected.

Appendix Three: Offences and penalties

For consistency with existing HSW regulations, regulatory offences and penalties should be set in accordance with the framework agreed by Cabinet in September 2015[CAB-15-MIN-0118]. Infringement offences should be set in accordance with the approach agreed by Cabinet in September 2015, outlined in Table 3 below [CAB-15-MIN-0118], and corresponding infringement fees should be set in accordance with the HSW framework agreed by former Ministers (Workplace Relations and Safety and Justice) in February 2016 [LEG-16-MIN-0012]. These are outlined in the tables below.

Framework for regulatory offences and penalties under the HSW Act

Maximum penalty on conviction for an individual	**Maximum** penalty on conviction for non-individuals such as corporates	To apply to:
$10,000	$50,000	• Offences which may have very serious consequences, i.e. risk of death or serious injury • Offences relating to risk assessment and hazard identification • Significant administration-related offences • Offences for specific risk controls, such as technical controls or in high risk industries • Emergency procedures
$6,000	$30,000	• Other risk control offences • Other offences which may have serious consequences • Information and training-related offences • Notification and administration-related offences • Licence offences
$2,000	$10,000	• Duties placed on workers • Duties placed on individuals other than workers • Record-keeping offences • Low-level offences

Framework for setting HSW Act infringement offences and fees

Type of infringement offence	**Infringement fees for offences in the HSW Act and regulations**	
	Individuals	**Non-individuals such as corporates**
Infringement offences where there is a direct link between the failure and the risk to someone's health and safety (eg no control of risks or provision of training)	$2,000	$9,000
Infringement offences where there is an indirect link between the failure and the risk to someone's health and safety (eg notification, provision of information)	$1,000	$6,000
Infringement offences that negatively impact on the efficiency of the health and safety system (eg record keeping)	$300	$1,500
Offences relating to duties placed only on workers or other individuals who are not PCBUs	$500	-

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

AIDE MEMOIRE

Plant and structures regulatory reform policy proposals

Date:	1 April 2021	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2021-2898

Information for Minister(s)
Hon Michael Wood **Minister for Workplace Relations and Safety**

Contact for telephone discussion (if required)

Name	Position	Telephone		1st contact
Lisa Collins	Manager, Health and Safety Policy	04 897 6436	Privacy of natural persons	✓
Alannah MacShane	Principal Advisor, Health and Safety Policy	Privacy of natural persons		
Bob White	Senior Advisor, Health and Safety Policy	Privacy of natural persons		

The following departments/agencies have been consulted
On the related Cabinet paper: Ministries of Education, Social Development, Defence, Transport, Justice and Health; Ministries for Women, Culture and Heritage, Primary Industries, Housing and Urban Development, Environment, Pacific Peoples; Departments of Prime Minister and Cabinet, Internal Affairs, and Corrections; Treasury, Te Puni Kōkiri, Office of Ethnic Communities; New Zealand Police, New Zealand Customs Service; WorkSafe New Zealand, Civil Aviation Authority, Maritime New Zealand, Accident Compensation Corporation; Tertiary Education Commission; Fire and Emergency New Zealand; Waka Kotahi/New Zealand Transport Agency, Environmental Protection Authority, and Kāinga Ora – Homes and Communities.

Minister's office to complete:

- ☐ Approved
- ☐ Noted
- ☐ Seen
- ☐ See Minister's Notes
- ☐ Declined
- ☐ Needs change
- ☐ Overtaken by Events
- ☐ Withdrawn

Comments

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

AIDE MEMOIRE

Plant and structures regulatory reform policy proposals

Date:	1 April 2021	**Priority:**	Medium
Security classification:	In Confidence	**Tracking number:**	2021-2898

Purpose

To support the process of Ministerial consultation on the policy changes under consideration, we provide in this Aide Memoire information about:

- the basis for reform
- consequences of the proposed changes for specific sectors
- how the proposals have been received by stakeholders.

Lisa Collins
Manager, Health and Safety Policy
Labour, Science and Enterprise, MBIE

1 / 4 / 2021

Plant and structures are integral to healthy and safe workplaces

1. There continues to be significant harm from the use of plant (machinery, equipment, vehicles) and structures (towers, scaffolding, silos, quarries etc) in the workplace. The majority of all work-related deaths from injury (79 per cent, or 54 deaths annually) are associated with some form of plant or structure. By sector, plant and structures are involved in:
    a. 83 per cent of construction fatalities
    b. 79 per cent of fatalities in the Agriculture, Forestry and Fishing sector
    c. 74 per cent of manufacturing fatalities
    d. 93 per cent of fatalities in Transport, Postal and Warehousing.
2. In responding to this harm as a workplace health and safety matter, any changes will not have effect outside of workplaces or change other regulatory regime requirements (eg exclusions for quad bikes under transport Rules). The strengths of a health and safety response are that it responds to work-related harm, which is significant, and provides a more even playing field for businesses and workers, of all different sectors – a level of consistency and equity that is currently lacking.

The proposed changes are part of a process of modernisation

3. The recommended proposals continue the implementation of the Royal Commission and Independent Taskforce on Workplace Health and Safety recommendations arising from the Pike River Coal Mine tragedy for modern, clear and comprehensive health and safety regulations.

4. The changes proposed are generally performance or process-based, and therefore accommodate a range of different businesses. They will assist duty holders to understand their primary duties of care under the *Health and Safety at Work Act 2015* (HSW Act) and correct ambiguities and weaknesses in current regulations (eg long-standing regulatory exclusions for mobile plant (vehicles) that are contradictory to HSW Act primary duties).

Required protections will be proportionate to risk

5. Some changes will be more relevant than others for particular sectors, due to differences in the nature of the work and the risks involved.

6. The reforms proposed set proportionate requirements that are scalable according to the level of risk involved. For example, the most extensive, "high-risk plant" registration and inspection requirements proposed will apply only for a defined sub-set of plant, with innate high-risk features (eg cranes, boilers and other pressure equipment, scaffolding systems, and steep slope forestry harvesting equipment). Only some changes will be directly relevant for all businesses.

7. In general:

    a. reforms to mobile plant protections have particular significance for the agriculture sector, where mobile plant (such as tractors, quad bikes, and other vehicles) is used extensively and is currently sparsely regulated

    b. reforms affecting high-risk plant (proposing the adoption of inspection and registration requirements for steep slope harvesting equipment) and general plant protections (setting requirements for good life-cycle management of plant, and safeguards for equipment used to suspend loads) are highly relevant for the forestry sector, but mobile plant protections less so (as operator protective devices and collision protection are already very well established in forestry work)

    c. high-risk plant reforms are also of some relevance to the tourism sector, with larger inflatable amusement devices (such as inflatable slides) expected to qualify as a category of high-risk plant and because of changes proposed to the inspection and authorisation of some types of amusement devices (such as fair ground rides)

    d. the changes will be of broad relevance for the construction sector as a package, with the changes proposed refining and clarifying mandatory controls for work at heights and on excavations, and requiring design registration of scaffolding and construction support systems as high-risk plant

    e. upstream duties (specifying requirements for designers, manufacturers, importers, suppliers and installers of plant and structures in workplaces) are of wide relevance to most industries, with the changes intended to improve safety and quality of information in relation to imported plant.

8. We set out our more detailed assessments for specific sectors in the table below. These adopt "marginal", "medium" and "high" ratings to provide a broad indication of relevance for individual sectors of the different categories of changes proposed. Associated costs are not

part of this assessment, with industry costs anticipated to be mostly incidental and modest overall.

	Agriculture	Forestry	Construction	Tourism
General plant protections eg: • guarding protections • maintenance requirements • operational and design requirements for lifting plant	Medium	Medium	Medium	Marginal
Mobile plant protections eg requiring suitable operator protections	High	Marginal	Medium	Marginal
Protections for high-risk plant and amusement devices eg requiring: • specific inspection and accreditation processes to be followed • registration of verified designs and selected items of high-risk plant	Marginal	High	Medium	Marginal
Protections for work at heights and on excavations eg: • establishing a mandatory hierarchy of risk controls for work at heights within construction work • clarifying where ladders can be used	Marginal	Marginal	High	Marginal
Upstream duties eg requiring: • certain minimum safety information is shared across the supply chain • actions are taken upstream to eliminate, or, if this is not possible, otherwise minimise hazards in plant/structures • certain engineered guarding and safety-by-design features	Medium	Medium	Medium	Marginal

Stakeholder divisions are at the margins

9. Overall, stakeholders are broadly supportive of the reforms proposed and the greater clarity they will provide.

10. For primary industries, there are selected elements of the package where views are more mixed. In particular:

    a. the proposed modifications to current operator protection requirements and regulatory exclusions (such as those applying to quad bikes and other plant under 700 kg) – opposed by Federated Farmers, but supported by others (such as Horticulture NZ and the Agricultural Leaders' Health and Safety Action Group), as an equitable and proportionate response

    b. the application of high-risk plant requirements for steep slope harvesting equipment and lifting plant requirements in forestry – opposed by the NZ Forestry Industry Safety Council (FISC) but supported by others (eg the New Zealand Council of Trade Unions), as an equitable and proportionate response

c. the proposed application of machine guarding protections for fisheries vessels – opposed by larger commercial fisheries businesses, who are resistant to broader rules (beyond existing Maritime Rules) but supported by other submitters (eg workers in various sectors), as an equitable and proportionate response.

11. Some owners of large-scale “bespoke” pressure equipment (eg Oji Fibre Solutions) submitted against the proposals for high-risk plant design and item registration. MBIE has adjusted the proposals to address the concerns raised, in particular to accommodate decentralised record-keeping in some instances.

12. The construction sector was supportive of the requirements proposed for work at height and on excavations, with the proposals generally viewed as codifying accepted best practice, and removing ambiguity and inconsistencies.

13. The Ministry for Primary Industries is neutral on the proposals. The Ministry of Transport and Maritime NZ are supportive in-principle of the changes proposed. The proposals for mobile plant are particularly relevant to the Transport portfolio and involve several classes of machinery which make some use of public roads, but primarily is used and presents risks in workplaces. In these cases there is agreement that the risks are best addressed as work health and safety matters, under the HSW Act and supporting regulations. Removing the current anomalies in regulations, concerning operator protective devices for mobile plant under 700kg, will be an essential first step to working with the agriculture sector and other groups to set appropriate standards and guidance, improve risk management and reduce harm.

14. Stakeholders will be provided further opportunity to engage on implementation timeframes, which are yet to be confirmed.

FEDERATED FARMERS OF NEW ZEALAND

Federated Farmers of New Zealand

Submission to the Ministry of Business, Innovation & Employment on the *Implementing the Health and Safety at Work Act 2015: Better Regulation Plant, Structures and Working at Heights discussion paper*

4 October 2019

0800 327 646 | FED FARM .ORG.NZ

Submission on the Implementing the Health and Safety at Work Act 2015: Better Regulation Plant, Structures and Working at Heights discussion paper

To: The Ministry of Business, Innovation & Employment

Name of submitter: Federated Farmers of New Zealand

Contact person: Privacy of natural persons

Address for service: Privacy of natural persons

Summary of submissions

Federated Farmers appreciates the opportunity to provide feedback to the discussion paper. We support the intention to clarify and align health and safety regulations and to make these more targeted and better understood.

We support MBIE objectives for the reform. However, it is important that any amendments reflect the large range of Small and Medium Enterprises (SME) and owner/operators, and the implications in terms of scale of risk, nature of plant and mobile plant and the ability to assimilate additional costs.

The Health and Safety at Work Act is only four years old, and more recent implementation and information provision resulting from the Act may still be in the process of manifesting through improved health and safety outcomes.

If adopted, successful implementation of the proposed changes will require providing effective support for farmers. A long term but effective focus should be on the socialisation of on-farm risks and the requirement to management risk.

As a general comment we support a focus on the behavioural and individual risk management components of on-farm risk, including better information and support for on-farm use of plant and mobile plant.

Federated Farmers supports the intention to apply the Prescribed Risk Management Process where it is justified. In general, we consider the Prescribed Risk Management Process applicable if it is applied appropriately to, and reflective of the specific practicalities of, the farming context.

We have provided specific responses to the questions posed in relation to Plant and Mobile Plant within this submission.

General submissions

1. Introduction

1.1 Federated Farmers appreciates the opportunity to submit to the *Implementing the Health and Safety at Work Act 2015: Better Regulation Plant, Structures and Working at Heights discussion paper* ("the discussion paper").

1.2 We appreciate and support the Ministry of Business, Innovation & Employment ("MBIE") engaging in this consultation process. Improving Health and Safety outcomes in New Zealand involves a multi-faceted approach, including regulation, guidance, and socialisation of the awareness of risks and risk management, within the complex challenges and requirements of individual sectors. Sector input to these components reduces complexity and enhances uptake, and improves outcomes.

1.3 We appreciate the discussion paper seeks information around the costs and benefits of each proposal on specific businesses. As a pan-sector industry group, we are not able to provide this specific representative feedback. Instead we provide comments on the broad implications and suitability of the options for the farming sector at large.

Summary

Federated Farmers appreciates the opportunity to provide feedback to the discussion paper.

2. The need for, and proposed shape of reform

2.1 In respect to agriculture, the drivers for change are clear. The discussion paper has identified the key contributors to agricultural deaths between 2008 and 2017, with 84% of deaths within the sector involving plant or structures and 73% of deaths involving mobile plant, including tractors (23%) and quad bikes (30%).

2.2 As outlined in the discussion paper, while not 'headline occurrences' these occur at a frequency and rate that cumulatively is concerning, emphasising the need for change. We consider those working on-farm have a right to earn a living in a safe working environment, and poor health and safety outcomes impact individuals, families and communities. Improvement is required.

2.3 The discussion paper proposes improvements aligned with the findings of both the Royal Commission of Inquiry on the Pike River Coal Mine tragedy and the Independent Taskforce on Workplace Health and Safety ("the Taskforce").

2.4 We agree the key findings of the Taskforce relate to agriculture. Successful implementation of those findings in an agricultural context need to reflect the practical challenges and implications facing those on-farm. This includes the reality that many farming operations are SMEs or owner/operators with limited capacity to take on additional capacity and limited scale to assimilate additional costs.

2.5 Implementing the 'fixes' for these issues will take time. Solving the identified issues in respect of lack of leadership, engagement and risk tolerance include cultural and social components which will require a period of change. These drivers are also integral to embedding long term adoption of good practices.

2.6 Further, the Health and Safety at Work Act ("the H&S Act") is only four years old. Implementation of and information provision around the requirements and practical implications of the Act on-farm are still unfolding. It is not entirely clear the existing regulations are failing to promote the changes sought by the proposals, particularly if a component of success is contingent on long term socialisation of issues and cultural change.

2.7 The discussion paper underlines the impact unclear, ad hoc and poorly aligned regulations and guidance for health and safety at work create confusion where practicality, clarity and simplicity are important. Again, we agree these are relevant issues that need to be addressed, particularly from the perspective of farmer uptake.

2.8 It is also important that regulatory changes are well translated and 'user friendly', given any failings in these areas can lead to increased stress on-farm, undermining both farmer and farm employee wellbeing and as a result, potentially undermining the outcomes sought by the proposals within the discussion paper ("the proposals").

2.9 We support the objectives for the reform, which seeks a framework that is:

- *effective – by reducing harm at work and preventing regulatory failure*
- *proportionate – so the level of regulation and regulator's actions are proportionate to risk and target key risks*
- *clear – so it is logical, consistent and easy to understand*
- *certain – so everyone understands their role in the framework and complies with it*
- *cost effective – so compliance and transitional costs are minimised*
- *flexible and durable – so it is responsive and can deal with changes, such as in technology and ways of working.*

Summary

We support the intention to clarify and align health and safety regulations and to make these more targeted and better understood.

We support MBIE objectives for the reform, however as the Health and Safety at Work Act is only four years old and improved health and safety outcomes resulting from the Act may yet manifest.

If adopted, successful implementation of the proposed changes will require providing effective support for farmers.

3. The Prescribed Risk Management Process

3.1 Many of the options within the discussion paper rely on the Prescribed Risk Management Process ("PRMP"). As outlined, this process is outlined in the *Health and Safety at Work (General Risk and Workplace Management) Regulations 2016*.

3.2 The PRMP requires businesses to:

- identify hazards and eliminate risks where reasonably practicable
- otherwise to minimise risks so far as is reasonably practicable by using one or more of the following control measures:
    - substitution
    - isolation
    - engineering controls
- if a risk still remains, implement administrative controls
- if a risk still remains, provide personal protective equipment
- maintain and review the control measures.

3.3 In addition to the PRMP, it should be noted farmers also provide training in respect to hazards and risk management which will support the process and the outcomes.

3.4 The PRMP takes a practical, tiered approach to assessing and dealing with hazards. It is not prescriptive around solutions, instead prescribing responsibilities and a logical process. This is particularly welcome in the agriculture industries where hazards can differ in nature, significance and source, as can effective mitigations and management options.

Summary

Federated Farmers supports the intention to apply the Prescribed Risk Management Process where it is justified.

In general, we consider the Prescribed Risk Management Process applicable if it is applied appropriately to, and recognising the specific practicalities of, the farming context.

4. Protections for people working with plant

4.1 While we recognise countries like Australia and the United Kingdom have more comprehensive regulations to manage risks from plant, it is important those comparisons are qualified for the New Zealand context.

4.2 According to OECD data, New Zealand has a greater number of SMEs per capita.[1] In our view these differences have two key implications from a farming perspective; the first is that the nature of risk is different, particularly given owner involvement in the management and operation of machinery and risk. The second is that there is

[1] https://data.oecd.org/entrepreneur/enterprises-by-business-size.htm

less ability for smaller enterprises to incorporate additional regulatory costs or obligations given relative economies of scale.

4.3 The latter is also intuitively a market driver for the relatively significant market for second hand equipment in New Zealand, which is discussed in the discussion paper as a driver. SMEs have relatively less funding to fund new plant, for replacement prior to decommissioning and for high levels of maintenance. Similarly, using existing plant for multiple uses may in many cases reflect economic and industry realities rather than a laissez faire approach to safety.

4.4 These differences are not justification for doing nothing; rather they emphasise the need to ensure regulations are tailored to the specific challenges within New Zealand rather than being driven by a comparative approach. The imposition of additional regulations and costs will not address or mitigate these underlying differences.

4.5 Despite this, it is clear change is required, particularly in instances where plant use and maintenance is undertaken by employees and service providers who have no, or limited, influence over the guarding, safety features and state of repair of plant, and who may be under time pressure.

4.6 It is clear from the discussion paper the existing regulatory controls are insufficient, with no regulatory controls other than those specific to lock-out when cleaning and maintaining plant.

4.7 Question 2.1 Should there be a default hierarchy of controls for guarding? Yes, although the hierarchy should reflect the level of risk associated with the plant, and a greater focus on the behavioural risk factors should be a priority. The discussion paper refers to research identifying inexperienced workers, lack of appropriate supervision, failure to follow safe work procedures, understanding of risks and proper uses of plant as key factors (page 12). The discussion paper proposes addressing these through stronger requirements around guarding. Unless the identified behavioural components are addressed, they may undermine these additional controls. We consider greater focus on information and training is required.

4.8 Question 2.2 Should there be a mandatory requirement to ensure appropriate guarding? Yes, although as above appropriate guarding is a relative term, and a broad requirement should be accompanied by or even preceded by information and training for the reasons above.

4.9 Question 2.3 Should record-keeping be required for presence-sensing safeguarding systems? Yes. Plant requiring presence-sensing safeguarding systems would generally be plant which poses a high risk and/or is of sufficient scale. Given the behavioural risk factors, the primary focus for the person with control of plant should be to maintain the plant sufficiently. Record-keeping provides surety this is occurring, as long as the requirements aren't unnecessarily onerous.

4.10 Question 2.4 Should there be requirements for emergency stop controls, operational controls, and warning devices on plant, and a requirement to

ensure proper use of plant? Yes. These proposals appear reasonable, practical and likely to be effective.

4.11 **Question 2.5 Should there be requirements for guarding and operational controls to ensure the safety of people cleaning and maintaining plant?** Yes, although these requirements should reflect the size of and risks posed by the plant. For smaller plant we support a focus on the operational controls:

- the plant cannot be operated by anyone other than the person cleaning or maintaining it, or
- if it must be operated by someone other than the person cleaning or maintaining it, then the person operating it must be authorised by the PCBU
- allows the plant to be operated in such a way that any risks to a person cleaning or maintaining the plant can be eliminated or otherwise minimised.

4.12 **Question 2.6 Should there be requirements on PCBUs managing or controlling plant, to address the risks from installing, constructing, commissioning, and decommissioning and dismantling plant?** Yes; the proposed approaches include reference to the qualifier 'so far as reasonably practicable', which we read as being, among other considerations, reflective of the scale of risk posed and specific factors relating to the plant.

4.13 **Question 2.7 Should there be a requirement to manage the risks of plant that is not in use?** No, unless there is a demonstrable reason for doing so.

4.14 **Question 2.8 Should there be a requirement to ensure plant is maintained, inspected and tested by a competent person either to the manufacturer's recommendations or otherwise according to a competent person?** No. It is unclear what additional specificity would add to the broader yet encompassing requirements outlined under section 36 of the Health and Safety at Work Act 2015. We support greater guidance around these requirements as they relate to the maintenance, inspection and testing of plant as an alternative.

4.15 **Question 2.9 Should there be a requirement to ensure health and safety risks from plant are not created or increased by using plant for new purposes or altering it?** Given the importance of the operator of plant in reducing this aspect of risk, we consider *Option 2: Enhance education and guidance* a more effective approach.

4.16 **Question 2.10 Is it necessary to require a competent person to assess whether or not the proposed new use increases risks to health or safety?** As above, we consider *Option 2: Enhance education and guidance* a more effective approach.

4.17 **Question 2.11 Do you agree with extending requirements to plant (except manually powered, hand-held plant)?** We agree that requirements of manually powered, hand-held plant should be different to that of other plant reliant on an external energy source.

4.18 **Question 2.12 Should the general requirements for plant apply to vessels and aircraft? What are the impacts of this?** No; these areas are already highly regulated, and including vessels and aircrafts would unnecessary costs to no or at

best marginal benefit. This area would be a concern for farmers if farm aviation services were required to work under different rules, increasing costs.

4.19 **Question 2.13 Should the general requirements for plant apply to powder-actuated tools?** No; the requirements should be different for powder-actuated tools and commensurate with the risk posed.

4.20 **Question 2.14 Should there be specific requirements for plant that lifts or suspends loads?** Yes; the approach used in the Australian Model Regulations appears reasonable and can be tailored to specific instances, subject to the changes suggested below.

4.21 **Question 2.15 Do we need a specific requirement that, when plant is not specifically designed for lifting, it must not cause a greater risk to health and safety? Please consider what extra benefit or impact this would have in addition to what is proposed for all plant (refer to question 2.9) – that if plant is used for a purpose other than which it was designed, a person must ensure it does not have risks to health and safety (as assessed by a competent person).** We would prefer the requirement is to not cause 'significantly greater risk' (or similar), particularly given the broader responsibilities of the Act remain relevant to these risks and the requirement for mitigation and management.

4.22 **Question 2.16 Are the exemptions for stunt work, acrobatics or theatrical performances appropriate? Is there anything else that should be excluded?** No opinion, provided any controls and requirements relating to the farming sectors are reasonable and able to be applied practically.

4.23 **Question 2.17 Should an alternative control method be provided for tree-lopping?** Yes; this activity is an example of instances where tighter controls would effectively inhibit the activity, and risks can be managed under the broader requirements imposed by the Act.

4.24 **Question 2.18 Is it necessary to refer in regulations to AS/NZS 1891 for harnesses?** No opinion.

4.25 **Question 2.19 "Plant that lifts or suspends loads" is not defined in the Australian Model Regulations. Should this be defined in our regulations?** No; the term is sufficiently clear and any attempt to provide greater clarity through a clearer definition may result in unintended exclusions.

4.26 **Questions 2.20 – 2.25 in respect to lasers and robots.** Given the complexity of robots and lasers, and the varying nature of potential risks, we support the continued approach of providing guidance, particularly given the broad responsibilities of the H&S Act apply.

4.27 **Questions 2.26 - 2.28.** We are reasonably comfortable with either a Prescribed Risk Management Process or greater education and guidance, although we prefer the latter given it could effectively translate the requirements imposed by the Prescribed Risk Management Process.

4.28 **Questions 2.29 Based on the proposals in this section on protections for people working with plant, are there any significant costs and/or benefits that will affect you or your organisation?** We cannot quantify the potential costs or benefits for farmers, although we underline the overall need to ensure costs are minimised and greater controls are warranted, effective and efficient.

5. Protections for people working with mobile plant

5.1 Risks and risk mitigation in relation to use of mobile plant on-farm hinge significantly upon the level of training, understanding of risks and work conditions associated with that use. There are multiple pressures on-farm and multiple requirements of farmers.

5.2 As expressed earlier, there are significant behavioural components to use of and risk management in relation to mobile plant on farm. The effect of the H&S Act has been reinforced by messages from industry groups and farmer leaders around the need to be responsible and careful in use of mobile plant on-farm. In many instances self-care is also a significant mitigation factor that is more readily recognised and encouraged.

5.3 We recognise other countries have tighter regulation around the use of mobile plant. In respect to farming specifically, we underline the roles that smaller sized organisations and businesses play in requiring a different approach in New Zealand, particularly the greater numbers of SMEs and owner/operators.

5.4 We agree broadly with the risks outlined, particularly in respect to quad bikes. As in respect to risk management and regulation of plant more broadly, we highlight the discussion document's reference to behavioural and risk management and hazard planning components as considerations in relation to the risks posed by use of mobile plant. We consider addressing these behavioural components a longer term but more efficient and effective strategy, and a priority.

5.5 **Question 3.1 We are proposing to apply the Prescribed Risk Management Process to plant (see Section 2 of the discussion paper). When applying the Prescribed Risk Management Process, should it specify the key risks of mobile plant? (The keys risks from mobile plant are overturning, falling objects, being thrown from the plant, mechanical failure of pressurised elements, and collisions).** The Prescribed Risk Management Process is a reasonable and logical approach to managing risks associated with mobile plant, provided it is supported by sufficient guidance and recognition of the practical requirements, limitations and challenges relating to a farm environment. We support the key risks from mobile plant being specified, although it is important this is done in a way that does not indirectly exclude relevant risks.

5.6 **Question 3.2 Do you think the Prescribed Risk Management Process should not apply to any of these key risks?** No.

5.7 **Question 3.3 Should there be specific requirements for operator protective devices on all mobile plant?** Only if sufficient research clearly justifies these specific requirements and there is a demonstrable benefit from the specific operator protective devices. Otherwise we support a framework that allows for requirements to be aligned to specific risk. Given the broader responsibilities imposed by the H&S Act and the socialisation of responsibilities and guidance under the Act, we expect improvements to continue. Examples include the uptake of rollover protection supported by the guidance provided by WorkSafe and the financial support for installation of rollover protection on quad bikes.

5.8 **Question 3.4 Is it appropriate for PCBUs to determine what is a suitable combination of operator protective devices?** As a broad response and on balance, yes. If supported by appropriate advice around design requirements to be tailored to the specific uses and risks associated with the mobile plant and mobile plant use. Where justified there is a reasonable argument for minimum requirements where these are demonstrably effective in reducing risk across the range of uses for a specific type of mobile plant.

5.9 **Question 3.5 Are there any types of mobile plant that require specific kinds of devices?** Devices should be tailored to both the types of mobile plant and the uses of that plant; as above though, there is a reasonable argument for minimum requirements for some mobile plant where this is demonstrably effective in reducing risk across the range of uses and where that mobile plant itself is demonstrably 'high risk'.

5.10 **Question 3.6 What other kinds of operator protective devices are appropriate for the mobile plant you use or manage at work?** No opinion.

5.11 **Question 3.7 Should there be a requirement to ensure plant does not collide or to ensure warning devices, because of the extra risk of harm?** Requirements should be commensurate with risk. There would be limited value in adding warning devices for many forms of on-farm mobile plant, for example. Broadly, we prefer Option 1: The Australian Model as a benchmark for any amendments.

5.12 **Question 3.8 Should there be a requirement to ensure an adequate field of vision?** This requirement is largely unnecessary and of limited value in respect to on-farm uses of mobile plant.

5.13 **Question 3.9 Are other requirements needed to manage risks from collision? (For example, requiring that mobile plant is switched off when operators are not in the cab to avoid it moving unexpectedly).** Requiring that mobile plant (for example quad bikes and tractors) be switched off in a farm setting would be unnecessary given the limited potential risks posed by collisions on-farm, and the practical requirement to keep some mobile plant operating for limited periods of time when the operator is outside of that machinery. Improvements in technology are already reducing risk in these areas; for example many modern tractors have controls on mudguards to allow work to take place outside of the vehicle in a safe manner. Given these factors we would support better guidance and information around potential specific on-farm collision risks posed by specific mobile plant in specific situations, where there is a link between those behaviours and risk.

5.14 **Question 3.10 Should information on traffic management be included approved codes of practice or other guidance?** Yes, provided it is relevant to the sector and applicable to the risks involved, and focussed on encouraging uptake.

5.15 **Question 3.11 Do you agree that passengers should have the same level of protection as operators when on mobile plant? For example, there may be situations where you think it would be safe for passengers to have more or less protection than the operator.** On balance we prefer the Australian model; that the requirement to provide the same level of protection as operators on mobile plant 'so far as reasonably practicable'. There are instances on-farm where the requirement is not practicable and may increase danger for passengers, so the focus should be on socialising the broader responsibilities of mobile plant operators towards their passengers as required under the H&S Act.

5.16 **Question 3.12 Do you think passengers should be expressly banned unless mobile plant is specifically designed to carry them? If yes, is this general or are there specific examples that should be covered. If not, why?** No. As above we prefer the Australian model, and from a farming perspective effective risk mitigation and appropriate safety equipment is a more practical and effective approach to addressing the risk to passengers.

5.17 **Question 3.13 Do you agree with the suggested definition of "mobile plant" (i.e. plant that is provided with some form of self-propulsion that is ordinarily under the direct control of an operator)?** Yes.

5.18 **Question 3.14 If we follow the flexible approach in the Australian Model Regulations, are exemptions for specific types of mobile plant necessary?** Broadly, we consider providing appropriate guidance and support alongside implementation and auditing of regulations should be priorities. Where the Australian Model is applied specific exemptions will be required, particularly if the proposed definition of 'mobile plant' is adopted. For example, two wheel motorbikes pose significantly less risk than quad bikes and should be exempt, both because of the relative level of risk and also because of the lack of feasible mitigation options. It is unreasonable and inefficient to the ability of WorkSafe to provide exemptions for these sorts of activities under s 220 of the H&S Act as a method for providing these exemptions.

5.19 **Question 3.15 If we follow a less flexible approach, for example, field of vision or banning passengers, are there any specific types of mobile plant that should be exempt from any of the requirements?** We do not support the less flexible approach; it is unnecessarily onerous, impractical and difficult to apply to differing circumstances.

5.20 **Question 3.16 Vehicles less than 700kg are currently exempt from roll-over protection and seatbelt requirements. Are there any vehicles under 700kg that you think should be exempt from the approach in the Australian Model Regulations for mobile plant?** Exemptions for vehicles less than 700kg should continue unless there is a clearly justified and demonstrable benefit in requiring roll-over protection and seatbelts. Noting the general requirements under the H&S Act

apply, and operators can choose to adapt these mitigation measures (and can be appropriately advised to do so in respect of their specific uses and circumstances). As above, the exemption should continue particularly if the intention is to capture all mobile plant without specific exemptions (for example for two wheel motorbikes). It is also relevant there are existing H&S requirements of those owning and operating vehicles less than 700kg without changes to this exemption.

5.21 **Question 3.17 Are there any types of mobile plant that require specific types of requirements additional to those discussed already for all mobile plant? Please give examples.** In respect of on-farm equipment we favour more flexible regulations which can be tailored to specific uses, risks and equipment rather than specific regulations in combination with exemptions.

5.22 **Questions 3.18 – 3.22.** No opinion.

5.23 **Question 3.23 Based on the proposals in this section on protections for people working with mobile plant, are there any significant costs and/or benefits that will affect you or your organisation?** Yes. Poorly considered and onerous obligations which do not reflect on-farm practicalities and are not commensurate with the level of risk would be prohibitively costly, and often will not result in corresponding benefits in respect to improvement of on-farm safety. It is also likely blanket approaches would result in lower uptake if they are not able to be effectively applied to the farm environment.

SUBMISSION ENDS

SUBMISSION - on the proposed Plant, Structures and Working at heights regulatory reform

Submitted by the Forest Industry Safety Council (FISC) – 4 October 2019

About FISC

FISC was formally constituted in 2015 following the Independent Forestry Safety Review (IFSR) and is a pan-industry body with the mandate to work across the full plantation forestry sector, representing one voice in health and safety, with a focus on leading harm prevention. Its key focus areas include;

- Improving health & safety leadership capability
- Promoting and supporting worker engagement
- Improving understanding, assessment and control of risk, including health risks
- Sharing information and safety resources through the www.safetree.nz website
- Improving competency and standards though business and task certification
- Helping the sector adapt to the Health and Safety at Work Act 2015.

FISC has an independent Chair and a Council made up of all key sector stakeholder groups including workers, contractors, forest managers, forest owners, farm forestry, government agencies, union and others. A full time National Safety Director leads the work supported by an Operations Advisory Group and various Technical Action Groups

Funding for FISC currently comes from ACC, WorkSafe and the Forest Growers Levy Trust (FGLT) with a considerable amount of voluntary effort from many individuals supported by their companies and sector groups.

Industry Background

The New Zealand forestry industry directly employs approximately 8000 people. It has an estimated 1.7million ha of plantation forest [NEFD 2016]. A record 35.4 million m3 of timber was harvested in 2018, a 10% increase on the previous year and 85% increase over the last decade.

The forest industry's contribution to New Zealand's GDP is $3.55 billion; $1.39b from forestry and logging and $2.16b from downstream activity. [NZIER March 2017].

The industry's serious injury rate has steadily declined over the last twenty years (whether measured in raw numbers, as a ratio to harvest volume or as a ratio to sector employment). Within harvesting the injury rate has halved over the past decade [source IRIS]. In the last 6 years, injuries resulting in more than a week off work have declined 20%. [Worksafe Data Centre]. The dramatic improvement can, in part, be attributed to increased mechanisation – that is replacing high-risk manual work with lower risk mechanical systems such as grapple extraction and winch assisted harvesting systems.

Our submission

This submission has been prepared by FISC, the Forestry Contractors Association, the NZ Forest Owners Association and the NZ Farm Forestry Association.

FISC's submission is focused on the impacts on the forestry sector, that is tree growing and harvesting activities along with associated operations which include road engineering and log transport. We have not commented on the sawmilling and wood processing sector.

In preparing this submission the question used to focus discussion and formation of an industry position has been;

Is the time, cost and on-going compliance with the proposed regulation going to make a statistically significant reduction in plant, working at height and excavation related accidents and associated loss?

Address for further correspondence:

The Forest Industry Safety Council

Po Box 10029, The Terrace,

Wellington 6143

Fiona Ewing National Safety Director Privacy of natural persons	**Wayne Dempster** Technical Action Group Lead Privacy of natural persons

Disclaimer,

This submission has been prepared by the FISC Plant and Structures regulatory reform Task Action Group (TAG). The group canvased for opinions via industry publications and sought the views of a representative sample of manufacturers, contractors, engineers, forest owners and contractors. It has been reviewed by both the FISC OAG and Council, and Forest Industry Contractors Assoc (FICA), NZFOA representatives and the NZ Farm Forestry Assoc. TAG representatives and associated parties also met with MBIE officials on 25 Sept to discuss aspects of the consultation document and broader government intentions. This submission is therefore based on a representative view of industry opinions. While every endeavour has been made to present a collective industry view, we must acknowledge that not all parties agree on all points. Every endeavour has been made to present a fair, accurate and proportionate response, FISC does not accept responsibility for any errors or omissions in this submission.

Section 2 - Protections for people working with plant

Because this section overlaps into Section 3 (Mobile Plant) there is an inevitable overlap of comments on forestry mobile plant design, manufacture, supply and operation. Due to the inter-twined nature of Sections 2 and 3 we have chosen to address each question, as set out in the consultation document.

Our submission on High Risk Plant (5) is covered later in the document

Discussion

The forestry industry has very little in the way of fixed plant, the exception being plant located at the occasional workshop, storage facility or tree nursery. However, it does employ a range of hand-held plant (hand and power tools) equipment, mobile plant and mobile plant fittings.

2.1 Should there be a default hierarchy of controls for guarding?

Support – we believe using the General Risk Regulation hierarchy of controls (substitution, isolate, engineering, administrative, PPE) for machine guarding is a sensible approach.

2.2 Should there be a mandatory requirement to ensure appropriate guarding?

Conditional Support – we support a mandatory requirement for appropriate guarding. However, we have reservations about regulation becoming overly prescriptive as there are often a range of solutions to isolate a person from the hazard and reduce or eliminate risk. Codes or good practice guidance are the best location for the detail and providing references to relevant standards.

We support PCBU accountability for the guarding system chosen and for them to implement solutions according to the hierarchy of control proposed in 2.1 and existing standards, codes or guidelines.

Where technology has yet to provide a 100% assurance of protection from a flying object (projectile), the forest industry requires an operator protective structure incorporating ballistic object resistant polycarbonate (front window) to fitted to the machine that is primarily exposed to the risk. Exclusion zones and controls such as site work plans, signage and dephasing of work (eg: separate loadout) are employed around the processing area. Mechanised log processing is a good example of this. Because topography dictates the size and shape of in-forest log processing sites (skids or landings), a degree of flexibility needs to be maintained, hence the need for a range of complementary protection solutions.

2.3 Should record-keeping be required for presence-sensing safeguarding systems?

No comment – very uncommon in forestry. We are aware of some developments in sonar-based and GPS proximity devices. While some show promise we understand some have limitations which could lead to unintended H&S consequences on a worksite.

2.4 Should there be requirements for emergency stop controls, operational controls, and warning devices on plant, and a requirement to ensure proper use of plant?

Conditional Support.
Ensuring emergency stop devices are fit for purpose and there is clarity around operational controls and the ability to prevent accidental activation makes sense. Warning devices deemed necessary, should be fit for purpose, including positioning.

We support training (second bullet - pg 36) but believe the requirements are adequately covered in the General Risk regulations (Sec 9) and additional regulation is not warranted. We therefore **do not support** additional regulation in the training space.

2.5 Should there be requirements for guarding and operational controls to ensure the safety of people cleaning and maintaining plant?

Support - Cleaning and maintenance of plant and attachments is an area requiring continued focus.

2.6 Should there be requirements on PCBUs managing or controlling plant, to address the risks from installing, constructing, commissioning, and decommissioning and dismantling plant?

While MBIE see this as a gap in existing legislation (HSAW Act) we feel Sec 38 and 43 collectively set an adequate framework of expectation on PCBUs and that additional regulation is not warranted. There are also the Management of Risk (30) duties.

2.7 Should there be a requirement to manage the risks of plant that is not in use?

Comment – providing clarity about what "not in use" means would be helpful. Is "not in use" time bound or is it plant that has been decommissioned, put in storage or disabled in some way?

We would consider a piece of stationary mobile plant that is idling is in use. In providing this comment, risks considered included hazardous substance release/spill or release from height of an object (eg: an excavator boom attachment).

In forestry, all mobile plant attachments are lowered to the ground when not in use. Log yarder ropes are lowered overnight/weekend.

2.8 Should there be a requirement to ensure plant is maintained, inspected and tested by a competent person either to the manufacturer's recommendations or otherwise according to a competent person?

Conditional Support – This really hangs on the definition of a **competent person** and level of risk associated with an item of plant.

Neither this consultation document, the HSAW Act or the General Risk and Workplace Management Regulations define a 'competent person'.

Sec 32 [GRWM] requirements relating to Exposure Monitoring includes the following description - *by, or under the supervision of, a competent person who has sufficient knowledge, skills, and experience in the appropriate techniques and procedures, including the interpretation of results.*

The Australian Model Regs include the following definition (chapter 1). *Competent Person: (g) for any other case - a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.*

The Cranes ACOP definition of a Competent person: *means a person who has acquired, through a combination of training and qualification or experience, the knowledge and skills to perform the task required.*

The Forestry H&S ACOP uses the following definitions;

■ Competency: *a measure of a person's ability to consistently demonstrate the skill required to carry out a job. Competency shall be supported by detailed documented evidence showing:*

› the task being carried out

› the situation the task was being carried out in

› the person who deemed the worker competent and their qualifications and/or experience

› how long the competency assessment took and when it was carried out

› what visual demonstrations were observed

› the process of assessment used to deem the person competent.

■ Competent person: *a person who can consistently demonstrate the skill and knowledge derived from experience and/or training for the type of work in which the person is employed and the approved code the person is required to work under.*

Another option may be to look at a "hierarchy of competence". This would relate to the complexity of the work to be done. For example;

1. Trade (or Unit Standard) qualification
2. CBIP equipment inspector (assuming relevant inspection discipline exists/is anticipated)
3. CPEng (in an appropriate discipline)

Question: Is it MBIE's intention to adopt or develop a **competent person** definition?

This is an important question as it has implications for many of the subjects and proposals raised in this consultation document. We are in **support** of MBIE developing a competence definition for inclusion in proposed regulation.

2.9 Should there be a requirement to ensure health and safety risks from plant are not created or increased by using plant for new purposes or altering it?

Conditional Support - Yes this makes sense. However, we would hope that the desired outcome could be achieved by an amendment to sections 39 & 40 of the Act, clarifying responsibilities when plant is modified, rather than by additional Regulation.

An example of this is introducing winch assist technology onto an excavator or bulldozer. The businesses doing this work today are designing and manufacturing to international standards using the services of a CPEng. As such they are meeting the requirements of the current Act.

2.10 Is it necessary to require a competent person to assess whether or not the proposed new use increases risks to health or safety?

Conditional Support - Yes provided the person assessing has the appropriate competencies. We believe this is happening in practice for forestry plant and in-line with the current duty to eliminate or minimise risks so far as is reasonably practicable.

2.11 – 2.13

No Comment - N/A to forestry -

2.14 Should there be specific requirements for plant that lifts or suspends loads?

This question raises several issues and challenges due to the range of plant employed in forests and the tasks they are engaged in, particularly on harvesting sites.

Discussion:

Over the last twenty years both type and application of forestry mobile plant has changed significantly. So too have the international standards to which this equipment is built. Various regulation, codes and, more lately, gazette notice variations have also sought to clarify requirements. To some extent this has cumulated in a degree of confusion about standards of compliance and inspection.

To summarise;

1999 - PECPR established a rather broad definition of a crane, with some exclusions (Schedule 2). The exclusions are;

- *Earth-moving and forestry equipment, not including such equipment being use as a crane*
- *Side-loading or end-loading transporters used to handle freight containers, **logs**, pallets, rubbish skips, or timber*

With respect to bullet 1, we understand this to mean purpose built harvesting equipment such as yarders, harvesters and standard excavators that are used for earthworks including road and landing construction, log shovelling and general skid work (ie: not as a crane)

2009 - The Crane ACOP crane definition [p.19] is the same as PECPR and would have captured most forestry equipment that raised or lowered loads. The Cranes ACOP scope includes Earthmoving and Forestry equipment. However, because PECPR excluded some earth-moving and forestry equipment this effectively means the equipment specifically excluded in the PECPR regulations is not within the Crane ACOP scope.

2013 (12 Dec), - A Gazette Notice with specific exemptions (with conditions) was published.

Items of mobile plant (including earth-moving equipment), not originally designed as a crane, and used for load-lifting incidental to their principal function are entirely exempt from the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 subject to the following conditions as applicable:
1. Lifting points and equipment used for rigging loads are to be certified by a Chartered Professional Engineer; and
2. in the case of new and used hydraulic excavators with an operating weight of 7 tonne or more, the following additional conditions apply:

a. the equipment is not to be modified to make it operate as a crane other than the provision of a lifting point; and
b. hose burst protection valves are required after 1 January 2016; and
c. operators and ground support personnel are to be adequately trained; and
d. operations are to be carried out in accordance with the Approved Code of Practice for Load-Lifting - Rigging; and
e. the equipment is to have a loading chart available to operators.

2015 (May) - an email document from Richard Steel (Worksafe) to FICA set out to clarify Worksafe's position on hose burst protection *(condition b.)* for forestry lifting equipment. The email reads as follows;

Regulatory requirements for Forestry Mobile Plant

There is a range of plant used in forestry harvesting to lift or carry suspended loads. Some of this equipment meets the definition of a crane under the Health and Safety Pressure Equipment, Cranes, and Passenger Ropeways regulations (PECPR), some of it is specifically excluded from these regulations and some is potentially captured by an exemption of equipment capable of load lifting gazetted by MBIE in 2013.

1. *All forestry equipment that meets the definition of a crane must meet the requirements of PECPR. For example, a self-loader when loading logs onto a truck by means of a truck mounted crane. Key requirements for compliance of this plant with PECPR are:*
    - *Design Verification*
    - *Annual load test, Inspection and Certification by an Equipment Inspector employed by an Inspection Body recognised by WorkSafe.*

   *This type of plant will **not** be required to have hose burst protection fitted by January 2016.*

2. *All forestry harvesting plant not being used as a crane is specifically excluded from the PECPR regulations under schedule 2 of the regulations. Examples of this type of equipment are:*
    - *Harvesting Equipment*
    - *Forwarders*

*This type of plant will **not** be required to have hose burst protection fitted by January 2016.*

3. *Forestry harvesting plant not subject to PECPR regulations and not originally designed as a crane but used for load lifting incidental to its principal function is not subject to the exemption of equipment capable of load-lifting gazetted by MBIE in 2013. For example, excavator (based equipment) with grapple used to lift logs on a skid site*

   *This type of plant will **not** be required to have hose burst protection fitted by January 2016 on the condition that:*

   - *No person shall be within 6 meters of the suspended load as required by section 16 of the Approved Code of Practice for Safety and Health in Forest Operations (ACOP)*
   - *Appropriate statements of performance are developed and implemented for all other instances*
   - *All truck trailers should have a suitable attachment to hold and position the chain eg a "pogo stick" to eliminate the need for the driver to be on the truck deck under or near the grapple*
   - *The truck driver should remain in the pre-determined safety position during the lifting operation before moving in to connect the trailer as required by section 16 of the ACOP.*

2015 (24 Sept) – Cancelled 12 Dec 2013 GN (above)

The following equipment will be exempt from the requirements of the Regulations, with effect from 24 September 2015:
Items of mobile plant (including earth-moving equipment), not originally designed as a crane, and used for load lifting incidental to their principal function are entirely exempt from the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 subject to the following conditions as applicable:
1. Lifting points and equipment used for rigging loads are to be certified by a Chartered Professional Engineer; and
2. in the case of new and used hydraulic excavators with an operating weight of seven tonne or more, the following additional conditions apply:

a. the equipment is not to be modified to make it operate as a crane other than the provision of a lifting point; and

b. the equipment is to have a loading chart available to operators; and

c. operators and ground support personnel are to be adequately trained; and

d. operations are to be carried out in accordance with the Approved Code of Practice for Load-Lifting – Rigging; and

e. except for load-lifting mobile plant used in forestry operations that do not involve the construction of forest roads, hose burst protection valves are required after 1 January 2016.

As you can see the final GN varied somewhat to the outcome of the Inspectors meeting in May of the same year. Those May 2015 Inspector meeting outcomes included a range of safe zone requirements to mitigate risk from a falling object. These are employed in forestry sites all around New Zealand and **we support** their continued use.

Of relevance to this discussion is that MBIE are looking to Australia to adopt components of the Australian Model Regs. We note that the AMR specifically exclude excavators from their definition of a slewing mobile crane.

> ***slewing mobile crane*** means a mobile crane incorporating a boom or jib that can be slewed, but does **not** include:
>
> (a) a front-end loader; or
>
> (b) a backhoe; or
>
> (c) an excavator; or
>
> (d) other earth moving equipment, when configured for crane operation.

So, the question we are inevitably left with is "what is different about NZ"?

Why would NZ regulation not also exclude excavators from the definition of a mobile slewing crane?

Controls:

Regardless of whether an excavator has hose burst protection fitted, the product being handled (in this case a log or logs) can escape from a grapple.

We submit that the most effective way to remove a worker from the risk of being struck by an object being handled by mobile plant is the continued use of a range of safe zone buffers or offsets.

In forestry, without exception, workers and suspended loads are managed using isolation techniques with the safety zone being dependant on the activity and risk. Refer to Sec 11.4 – Safety Zones, 11.8 Mobile Plant Assisted Felling, 13.1 Working on Landings and 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations).

With respect to yarder operations there has been a significant movement towards mechanical grapple extraction. In this case no persons are on the extraction face (other than a spotter from time to time who is stationed at a safe distance (greater than two tree lengths) with a good view of the extraction area). For manual breaking out in cable operations, current systems rely and establishing a breaking out plan for the day's work. The safe retreat distance can be altered according to the terrain and/or risk. The workers closest to the ropes are the ones signalling the movements (there are audible signals prior to all rope movements). As per European developments it is possible that in the future, breaker outs will be the persons controlling yarder movements directly from the hillside. Yarder interlocking systems are not employed (worker location relative to rope position), but systems to track workers in relation to proximity to the extraction corridor are being developed. Log processing, sorting, stacking and loading is a very safe operation. Tens of millions of logs are handled every year, yet the activity has an incredibly low accident rate. We cannot think of a single fatality in the industry in the past decade that has been caused by an event associated with the unintended release of a log or stem suspended by an excavator. There have been two events that might be considered loss of control but in neither case a hose bust protection non-return value would have changed the outcome. Those two events were;

1. *Loading logs onto truck with digger. Deceased leaned out through opening in cab where window had been. In doing so accidently pushed a joystick which caused the boom of the digger to lower rapidly, trapping deceased between the boom and cab of the machine.*

2. *Machine operator was struck by log. He was standing in a position behind trailer as front packet of trailer was being loaded by another operator. He was found 9 m from excavator and inside the loading zone.*

Relief Sought:

We **support** the continued use of CPEng or competent inspectors to carry out periodic inspection of cable yarders due to their complexity, age, variability and load stress.

We are exploring the value of incorporating a CPEng (in an appropriate discipline) or competent inspector inspection of winch assisted harvesting / traction assisted hardware. This would be independent of the equipment owner's responsibility to carry out maintenance and checks in accordance with manufacturer's recommendations.

We submit that the fitting of hose burst protection valves on earth-moving excavators that lift, suspend or process logs will achieve very little, when measured by a reduction in accidents. They may arguably prevent the sudden drop of a trailer when being unloaded and set-up to carry logs (property damage).

We do **support** the safe work practice position set out in the final four bullet points of the Worksafe NZ representative's email (May 2015) described on p.8 above.

We **support** the suggestion that excavators lifting or suspending loads have a loading chart available to operators and that the excavator is fit for purpose (suitable size and capacity).

We **do not support** additional regulation in relation to excavators. We are of the view that actions that must be taken to manage risks associated with working under raised objects under the GRWM Regulations, including application of the prescribed risk management process, are sufficient.

Globally, at present, purpose-built forestry equipment is not classified as plant that lifts or suspends loads and therefore is not subject to specific loading or suspended loads requirements (ie: hose burst protection devices). The majority of this equipment is excavator based. NZ regulation should be following global thinking here.

2.15 Do we need a specific requirement that, when plant is not specifically designed for lifting, it must not cause a greater risk to health and safety? Please consider what extra benefit or impact this would have in addition to what is proposed for all plant (refer to question 2.9) – that if plant is used for a purpose other than which it was designed, a person must ensure it does not have risks to health and safety (as assessed by a competent person).

Covered in 2.14 above and the mobile plant section.

2.16 Are the exemptions for stunt work, acrobatics or theatrical performances appropriate? Is there anything else that should be excluded?

No comment - N/A Forestry

2.17 Should an alternative control method be provided for tree-lopping?

Discussion:
While tree lopping is not defined, we are of the view that Forestry Tree Pruning is not tree lopping. Tree Lopping should be defined and constrained to arboriculture type work.

Relief Sought:
We **request** the inclusion of a definition for Tree Lopping in the proposed regulations and that it specifically excludes forestry tree pruning. Also see Sec 6 – Working at Heights

2.18 Is it necessary to refer in regulations to AS/NZS 1891 for harnesses?

No Comment

2.19 "Plant that lifts or suspends loads" is not defined in the Australian Model Regulations. Should this be defined in our regulations?

Conditional Support – We support defining "Plant that lifts or suspends loads" but not any unjustifiable raising of the bar due of controls that are already in place that have proven effective via historic lack of incidents recorded.

For forestry, the insertion of a table into the Forestry ACOP (perhaps as an appendix) that outlines requirements for specific plant and applications would be the best method to convey the information to PCBUs.

2.20 – 2.21 Industrial Robots

The consideration of additional controls for industrial robots, MBIE needs to proceed with caution.

Discussion:
Our main area of concern at Forest Growers Research Ltd (FGR) is in the designing, manufacturing, supplying, installing and commissioning of new plant and equipment in harvesting and log transport operations. The application of automation and robotics will undoubtedly increase in the forest industry over the next 5-7 years, particularly as the industry and government are co-funding a seven-year $29.3 million Primary Growth Partnership (PGP) programme. This programme, which commenced from 1 January 2019, is aimed at investment in the design, manufacture and commercialisation of new equipment and technology focussing on forestry automation and robotics to achieve significant improvements in worker safety and environmental outcomes and address growing labour shortages in the sector. The review of the regulations that sit under the Health and

Safety at Work Act 2015 should be cognisant of the design and development of remote controlled, teleoperated, autonomous and robotic machinery that will improve worker safety.

We submit that;

- It is likely that unmanned, autonomous or teleoperated machinery may in fact require more sensors (such as inclinometers, accelerometers, cameras, proximity sensors etc.) to maintain safe operation. The key message is safety by design.
- Australian & New Zealand Standards exist that technology developers and manufacturers must comply with when building remote control and teleoperation systems. These cover issues such as safety features, safe zones of operation, automatic stops, latency, loss of reception etc.
- The forestry environment must be noted. In many cases machinery is naturally isolated from indirect workers (not involved in the actual operation) or there are exclusion zones already in place via the ACoP (two tree length rule). Exclusion rules for robotics need to reflect the forestry environment.

We have found that there are already good resources and guidance available for designing and commissioning teleoperated equipment is forestry. Specifically, there is a NZ Standard for remote controlled mining equipment that we have found meets our needs. The Standard uses well established procedures for hazard management that are detailed in other standards.

In short, the key message is set a broad but flexible framework that allows innovation to thrive, while ensuring fail to safe design is promoted and unintended consequences avoided.

2.22 – 2.25

No comment - N/A Forestry at this point in time

2.26 Should PCBUs managing or controlling plant be required to apply the Prescribed Risk Management Process when managing risks from plant?

Conditional Support – subject the points raised earlier in this section and Sec 3 (because mobile plant is considered a subset of plant) we support the application of a single PRMP.

2.27 Would education and guidance on the risk management process alone improve PCBUs' ability to identify and manage risks from plant?

Yes.

While the Act sets out the duty, there is confusion about the 'doing' aspects of applying a risk management process to worksite risks. Education and guidance could also look at alternative risk assessment and monitoring methods that are used.

2.28 Are there any further requirements needed, in addition to the Prescribed Risk Management Process, to specifically manage risks to health from the use of plant?

No

2.29 Based on the proposals in this section on protections for people working with plant, are there any significant costs and/or benefits that will affect you or your organisation?

Refer to 3.23

Section 3 - Protections for people working with mobile plant

For the purposes of this discussion, MBIE's consultation document defines Mobile plant as *"plant that is powered or self-propelled, such as vehicles and equipment, e.g. mobile cranes, bulldozers, quad bikes, elevating work platforms, forklifts, and vehicles such as cars, vans, and trucks used for work".*

3.1 We are proposing to apply the Prescribed Risk Management Process to plant (see Section 2 of the discussion paper). When applying the Prescribed Risk Management Process, should it specify the key risks of mobile plant? (The keys risks from mobile plant are overturning, falling objects, being thrown from the plant, mechanical failure of pressurised elements, and collisions).

Conditional Support with reservations about adding a level of complexity. Our concerns are around balance and ensuring that, when risks are assessed, the risk associated with how the plant is used at the task or job level is the focus, and less so the item of plant in isolation.

We have concerns that if each piece of mobile plant on a site requires an individual risk assessment, in isolation to the task, we may be setting workers up to fail. We agree there is no excuse for operating a piece of plant that is in an unsafe state and that periodic inspection of plant to ensure it remains fit for purpose is important. However, in our experience the mobile plant itself rarely causes an accident – it's the way in which it is operated that is the key contributor.

As such believe a more appropriate approach is to look at the work. What are the potential causes of harm? How significant are the risks (consequence and likelihood)? - then apply suitable controls to mitigate. Invariably this will require a collective examination of the task (environmental factors, the people, the site and the plant/equipment). In forestry there are already restrictions on where plant can and can't operate and operator protection requirements are codified.

3.2 Do you think the Prescribed Risk Management Process should not apply to any of these key risks?

Support the application of the Prescribed Risk Management Process to overturning, falling objects, being thrown from the plant and mechanical failure of pressurised elements

Unless a degree of flexibility is allowed, **Oppose** the application of the Prescribed Risk Management Process to the management of collision risks (specifically in forestry).

Discussion:
Orange flashing lights on mobile plant will not make forestry worksites safer. In many cases there are three (sometimes more) machines carrying out complementary functions in pre-planned work areas where routinely no ground workers are present. These pieces of plant are large and easy to see. The visual pollution created by these strobe-like lights outweighs the benefits and due consideration needs to be paid to the operators working in this type of environment.

Mobile plant on forestry worksites also generate their share of noise. We submit that adding additional noise by mandating track movement alarms will provide little added value in terms of a

warning that the machine is on the move and may even add risk by creating confusion and annoyance for site workers who constantly hear the alarms but who are not in the danger zone.

These items of plant are all diesel powered and sufficiently audible. Adding a higher pitch/frequency noise would serve little more than adding to noise pollution on-site. Yarder movements are planned and have the full focus of a crew. Excavators, harvesters and forwarders (tracked or wheeled) are slow moving (<5kph) machines. Harvesters work in isolation from other workers. Wheeled loaders generally operate in yards or super-skids where ground workers are absent.

There is also the potential to inadvertently create additional risk where items of plant emit different types of warning sound. On top of this ground workers will often be wearing ear-protection because their work involves the use of a chainsaw.

Our understanding is that two different standards could apply [to construction sites]:

- If the alarm is considered as 'auditory warning signals' then ISO 7731 would likely apply, requiring the level of the signal to be 15 dB above the background noise level in the area, not to exceed 112 dB and recommending the alarm to have dominant tones.
- For movement alarms on earth moving equipment, then ISO 9533 would likely apply, requiring the alarm to be at least as loud as the engine under full power.

This is a consider level of additional noise.

We understand that OHS regulations in the other states of Australia are essentially the same as for NSW and only require an effective warning device be incorporated but not that it needs to be an audible alarm. [source: NSW beeper alarm research]

We concede you could make a case that wheeled loaders should have movement sensors on the basis that they are capable of higher speeds and forward view can be obstructed with a suspended (multi log) load in the machine's beak.

Recent Worksafe advice with respect to noise exposure has been along the lines of were noise is of a level that presents a risk of hearing loss to workers, hearing protection is not enough. PCBU's need to be looking further up the PRMP at isolation/engineering controls to reduce noise. PCBU's also have a duty to monitor exposure to noise. We submit that any proposal to increase noise duration or intensity is unacceptable. In addition, while our activities are predominantly rural, we do receive neighbour complaints about noise (machines and yarder talkie-tooters) when working near boundaries.

Controls

In poor light, there is already a regulated requirement for the site to be well lit. Mobile plant used in forestry operations are fitted with and use LED lights for this purpose.

As described in 2.14 above, man/machine interaction is managed using isolation techniques, the safety zone being dependant on the activity and risk. Refer to Sec 11.4 – Safety Zones, 11.8 Mobile Plant Assisted Felling, 13.1 Working on Landings and 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations). We do accept that these controls are administrative. We do not accept the application of orange flashing lights and reversing beepers (engineering controls) will make a material reduction to collision risks.

All visitors to a forestry worksite must be inducted onto the worksite. If the purpose of their visit exposes them to a collision risk, the conflicting work is suspended until such time as one of the tasks is completed or adequate separation is achieved. Most frequently we see this around service agents and fuel deliveries.

Log truck drivers have three forms of safe zone refuge available to them. Refer to 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations) and Log Transport Safety Council (LTSC) Industry Standards. On occasions a harvesting contractor will limit the option to just one (in the cab) due to the risks on that site.

https://logtruck.co.nz/industry-standards/

https://www.environment.nsw.gov.au/resources/noise/beeperalarm.pdf

3.3 Should there be specific requirements for operator protective devices on all mobile plant?

Support operator protective devices on all mobile plant.

Discussion:
The industry has been well served by Operator Protective Structure Code of Practice (1999).

We do have a couple of suggestions to improve its effectiveness.

The Code is in need of review. The forest aspects that require revision include;

(a) Outdated regulatory references *(Clearly define the standards that apply, the use of outdated standards only leads to inconsistency and confusion. Consistently including certifier credentials)*
(b) Table 1B – guidance on protective windscreens (polycarbonate or similar) is required.
(c) Emergency escape hatches *(should be application based and consistency required)*
(d) Multi point operator harness and seatbelts (should also be application based)
(e) Certification plate consistency *(consistency is the biggest issue here and this is very much linked to (a). We require consistency from CPEng with regard to design and certification standards, re-certification processes and the time frames applying to certifications)*
(f) Imported forestry specific OPS
(g) Review (removal) of COPS G3 and a shift of focus to internationally recognised standards. It is a hangover from the days when excavator specific standards were not available. This change would make required standards clear, opens opportunities for local manufacturers in off-shore markets and eliminates the need for time-based re-certification. This would need to be introduced in a reasonable time frame and not be made retrospective. This would also require more discussion and analysis.

https://worksafe.govt.nz/dmsdocument/1679-operator-protective-structures-on-self-propelled-mobile-mechanical-plant

We submit that MBIE support for a revision of and continued use of the OPS Protective Structure Code would be of more value than regulation that sets out to achieve the same outcomes. Design and manufacture to internationally recognised standards should ensure performance requirements are met. The advantage of a Code (either approved or industry managed) is that it can be kept up to date for engineering practices, plant innovation and updated standards.

3.4 Is it appropriate for PCBUs to determine what is a suitable combination of operator protective devices?

Yes - With the assistance of a Code (see 3.3)

3.5 Are there any types of mobile plant that require specific kinds of devices?

Yes - With the assistance of a Code (see 3.3) or Good Practice Guide we would like the following points to be considered.

Winch Assisted Machines (WAM) require specific emergency management devices. These include anchor movement monitors, visual confirmation of rope drum integrity, emergency stop systems, rope tension monitoring, slope monitoring and so forth. Emergency egress (3 types) for tracked machines operating on steep slopes is seen as a base requirement (certainly for new deployments)

It could also be worth looking at automatic fire suppression systems, both from operator, plant and forest asset protection perspectives.

3.6 What other kinds of operator protective devices are appropriate for the mobile plant you use or manage at work?

- Multi-point harness fitted in plant operating on slopes > a specified slope (eg: 18 deg), provided the seat type allows such a device to be safely fitted.
- Means to accurately assess operating slopes if working above 18 degrees (eg: clinometer, machine sensors or slope maps/GPS)
- Windscreen protection from projectiles if operating a Processor (revisit min polycarbonate thickness)

From time to time there has been discussion around whether specific items of mobile plant (rollers and graders) used in road construction and maintenance require Falling Object Protection (FOPS) to prevent branches etc falling into the cab. All machines have ROPS. However, there is a case to say that plant like graders/rollers, which are working on formed roads, are no more at risk than light vehicles or logging trucks travelling in the same roads and as such should not require FOPs. The better control is removing the hazard (road-lining sufficient width) or leaving the site in windy conditions.

3.7 Should there be a requirement to ensure plant does not collide or to ensure warning devices, because of the extra risk of harm?

Not supported

Refer to discussion points in 3.2 above

3.8 Should there be a requirement to ensure an adequate field of vision?

Yes, should be achieved by designing and building cabin structures to appropriate current ISO standards. This would assist with consistency on this matter. The use of the current ISO standards as

the reference would make the requirements transparent for all. We do not support mandatory installation of “adequate devices” to improve the operators’ vision. The wording is far too subjective for regulation.

3.9 Are other requirements needed to manage risks from collisio*n?* (For example, requiring that mobile plant is switched off when operators are not in the cab to avoid it moving unexpectedly).

Not supported

Refer to discussion points in 2.7 and 3.2 above.

Furthermore, mobile plant attachments are lowered to the ground when not in use. All mobile plant has braking systems. Requiring that plant be ‘switched off’ when operators are not in the cab does not necessarily prevent a wheeled vehicle from moving if brakes were not applied properly or fail.

3.10 Should information on traffic management be included approved codes of practice or other guidance?

Support - option 3 “Include traffic management around mobile plant in guidance or approved codes of practice for specific plant or industries”.

We **do not support** Option 1 (AMR) & Option 2 (UK approach).

3.11 Do you agree that passengers should have the same level of protection as operators when on mobile plant? For example, there may be situations where you think it would be safe for passengers to have more or less protection than the operator.

N/a for the majority of mobile plant on a forestry work site as it is single seat, enclosed cabin and not designed for passengers.

Vehicles such as cars, vans, and trucks used for work – passengers are afforded the same level of protection (seatbelts).

ATV use is limited in forestry. They are used for transportation in some operational management activities. They are also used to transport boxes of seedlings for planting (single person operation). Side by sides are increasingly replacing ATV’s and have rollover protection and seatbelts.

3.12 Do you think passengers should be expressly banned unless mobile plant is specifically designed to carry them? If yes, is this general or are there specific examples that should be covered. If not, why?

Support– in the case of ATV’s designed for single person use. If the piece of mobile plant is stationary for training purposes (eg: a log yarder or excavator) than a 2nd person (trainer) must be permissible.

Some purpose-built forestry machines have room in behind the seat for someone to stand. In a benign environment (eg: processing on a skid) this is a good option for training that we've used and would like to continue to use.

3.13 Do you agree with the suggested definition of "mobile plant" (i.e. plant that is provided with some form of self-propulsion that is ordinarily under the direct control of an operator)?

Conditional Support - We believe vehicles used on the public road network and subject to WOF and registration (cars, utes, vans and trucks) should be excluded from the definition of mobile plant. If such vehicles that have modified for use and no longer warranted or registered, they should be included in the definition of mobile plant and subject to associated regulatory requirements.

3.14 If we follow the flexible approach in the Australian Model Regulations, are exemptions for specific types of mobile plant necessary?

No Comment

3.15 If we follow a less flexible approach, for example, field of vision or banning passengers, are there any specific types of mobile plant that should be exempt from any of the requirements?

Discussed in 3.8 & 3.12

3.16 Vehicles less than 700kg are currently exempt from roll-over protection and seatbelt requirements. Are there any vehicles under 700kg that you think should be exempt from the approach in the Australian Model Regulations for mobile plant?

No comment

3.17 Are there any types of mobile plant that require specific types of requirements additional to those discussed already for all mobile plant? Please give examples.

Discussed in 3.5

3.18 – 3.22

N/a for Forestry

3.23 Based on the proposals in this section on protections for people working with mobile plant, are there any significant costs and/or benefits that will affect you or your organisation?

In summary, we submit that MBIE support for the continued use of a revised Operator Protective Structure Code for Self-Propelled Mobile Mechanical Plant ACOP would be of more value than additional regulation that sets out to achieve the same outcomes.

We have an open mind on whether we go this alone or in conjunction with the construction sector but do prefer a Forestry OPS Code. That could be stand alone or incorporated into the existing Forestry H&S in Forestry Operations ACOP. This approach would allow us to move forward on risk-based solutions for mobile plant risks as opposed to on overly prescriptive regulatory approach. This approach would also assist the industry to clarify inspection requirements and standards.

We would have concerns if there were any moves to retrospectively apply any Regulation change. While the industry doesn't have a mobile plant census as such, we estimate there are possibly as many as 3500 items of mobile plant operating in NZ forests. We do know there are approximately 300 yarders and 120 WAMs. The figure of 3500 includes machines used for road and landing construction and maintenance, land preparation and production thinning. But by far the greatest percentage are used in harvesting to fell, extract, process, sort, stack and loadout logs.

Depending on the change, any retrospective change could add significant cost to businesses. A day in the forest auditing and inspecting plant (including costs of travel and follow-up) would be in the order of $1000. The cost of physical changes – well that would depend on the degree of change but clearly could be very expensive.

We should also make the point that mobile plant variability (tracked or wheeled), the task to which the machine is applied, additional support arrangements (winch assisted or not), the operating conditions and an operator's skill set are all factors that influence risk factors (going beyond the piece of plant in isolation). Hence, we feel an industry led solution (by way of a Code) is likely to give the best outcome in terms of communication of requirements, consistency of application, management of risk and flexibility to incorporate new designs and standards.

Again, ball park figures but if 1500 items of plant are earthworks excavators used to stack and load logs and unload trailers then there would be a significant cost to bear if these machines required an annual CPEng Inspection (load test) or Certification by an Equipment Inspector employed by an Inspection Body. For excavators, **we would far prefer** the proposal put forward by Worksafe in 2015 (see 2.14) to apply.

- *No person shall be within 6 meters of the suspended load as required by section 16 of the Approved Code of Practice for Safety and Health in Forest Operations (ACOP)*
- *Appropriate statements of performance are developed and implemented for all other instances*
- *All truck trailers should have a suitable attachment to hold and position the chain eg a "pogo stick" to eliminate the need for the driver to be on the truck deck under or near the grapple*
- *The truck driver should remain in the pre-determined safety position during the lifting operation before moving in to connect the trailer as required by section 16 of the ACOP.*

Section 4 – Designers, Manufacturers, Importers, Suppliers, Installers of Plant or Structures

No comment

Section 5. High-risk Plant

Scope: Our Section 5 submission focuses on the proposal's impacts on the forestry harvesting sector and to a lesser extent tree growing and road engineering operational activity. Log transport is not affected. We have not commented on the sawmilling and wood processing sector.

Discussion
The purpose of this discussion section is to highlight aspects of questions included in the Consultation document that will specifically impact on the forestry industry.

We have chosen to begin this section with a general discussion about concepts and issues then have split our response into two sections. Sec 5.1 looks at the specifics of Winch Assist Machines (WAM) / Traction Aid (TA) plant and Sec 5.2 at cable yarders. We have taken this approach because each has different characteristics and risks.

Australian Model Regulations (AMR) and High-risk plant
The proposed adoption of components of the AMR are of concern to us. These regulations contain a range of risk based mandatory controls for different classes of high-risk plant. These include "*maintenance and inspection requirements, licensing of operators, record keeping and notably, requirements for a plant and equipment register and operator licence register".* We believe adoption and application of these requirements to some forestry plant, should it be classified as high-risk, will have a significant impact on PCBU's without a commensurate reduction in risk or noticeable impact on harm prevention.

Defining High-Risk Plant - firstly and importantly any discussion on proposals in this section must start with a definition of high-risk plant. Without a definition or schedule, what's in or out of scope becomes very subjective. What appears high risk to one person or entity may indeed be low risk to another due to the latter's closer understanding of the risks, design features and applied controls.

The consultation document [p.88 – para 2&3] refers to the AMR high-risk plant characteristics (ie: *"plant that presents a **potential** for serious injury or death to operators and/or users)*. We note that the AMR does not actually provide a definition of high-risk plant. Instead it provides a schedule of plant (Part 1 Schedule 5) requiring registration of items of plant and plant designs.

We note that the AMR high-risk schedule contains no plant commonly operated in NZ forests.

Referring to the previous paragraph, if ***potential*** is a combination of Consequence and Likelihood of an event occurring, it's our belief that the forestry plant, which has been proposed for classification as high-risk in this consultation document, has a high (but not very high or extreme) Consequence and very low Likelihood *for serious injury or death to operators and/or users.* Unlike cranes, which operate in residential or commercial spaces (where failure has the potential to not only impact on the operator but also the public and others property), forestry's risk is contained to the site and in most circumstances the operator. In all cases the operator is protected by a codified protective structure and, with respect to Winch Assisted Machines (WAM), fail to safe features are built into the design.

There are also a range of engineering and administrative controls employed to address risks with plant that currently have a component of CPEng inspection. These include breaking out plans and steep slope operational plans, industry qualifications (NZ Certificates or unit standards) and best

work practices. Engineering controls include emergency stop systems, rope tension monitoring, slope monitoring and so on. Operational standards are also monitored.

The consultation document talks of high-risk plant can have *"catastrophic consequences"* [p.87]. In a risk management sense, Catastrophic consequences are generally accepted as being those with the highest level of Consequence (multiple fatalities and serious injuries) where there is a more than minor Likelihood of occurrence.

In the context of the 'catastrophic consequence' test we believe the forestry industry currently has no plant (fixed or mobile) that should be defined as high-risk plant and thus subject to the proposed design and inspection regulation.

The use of the term CPEng in Q 5.18

MBIE have stated a preference to adopt many of the AMR requirements *with appropriate modifications for the New Zealand context.*

With respect to the NZ context, MBIE have proposed classifying some forestry plant (that currently requires CPEng inspection) as high-risk and apply a regime of regulated controls. This would include yarders (which are currently excluded from PECPR (Schedule 2) but subject to a codified inspection requirements (ACOP p.92) and Winch Assisted Machines (WAM) which are not covered by PECPR, but subject to design and manufacture standards, CPEng inspection on deployment and regular inspection as set out in Operating or Machine manuals and the Worksafe Factsheet.

The consultation document includes the following two statements [p.104].

… the Aust Model Regs include a range of lifting and access equipment that are currently excluded from PECPR Regs" and

… we are also aware that codes or guidance recommend that some items of forestry plant be inspected by CPEng. We suggest that this equipment should be registered as items of plant.

Firstly, with respect to the AMR statement, neither an excavator or harvester (which are part of a WAM harvest system) are included as an item of lifting equipment in the AMR. An excavator is specifically excluded as a type of slewing mobile crane [see p.9 above]. Incorporating them in any new regulation is going beyond the AMR. If we then apply a NZ context lens, if the AMR does not include specialised forestry equipment (ie: log yarders and winch assisted harvest machines), why would the NZ regulator include them given the risk associated with the plant is the same across both jurisdictions and industry accident statistics don't support the high-risk tag?

We believe the inclusion of yarders and winch assisted harvest machines is unwarranted and cannot be substantiated based on the AMR or accident or incident data [see 5.1 below]

Secondly, by suggesting that CPEng inspected plant needs design and item registration (by regulation) is effectively creating three classes of excavator – one that is used for winch assist operations (either as an anchor machine or operating on slopes) and subject to CPEng requirements, those that are purpose-built forestry machines used for felling or processing and conventional excavators that are used for log loading and earthworks.

Finally, when the Forestry ACOP was revised and approved (2012) the future consequences (in terms of Regulation) of the use of the acronym 'CPEng' could not be envisaged. CPEng requirements were included in the Code because the industry acknowledged the need to have appropriate standards in order to self-manage identified risks. We see this as an industry led solution that has and continues to serve us well. With respect to WAM, the Code established a set of requirements around safety critical components [6.5.2] which the industry has diligently followed. Incident data tells us the industry is managing this activity very well and that redefining this plant as high-risk, with associated regulatory requirements, is not warranted.

5.1 Winch Assist / Traction Aid Machines

Further to the point on CPEng inspection, in June 2016 Worksafe NZ released the **Winch-assisted Harvesting on Steep Slopes factsheet**. It provides guidance on compliance with HSAW Act, how ACOP requirements should be seen under the Act and additional guidance to PCBUs on eight aspects of WAM activity. PCBU's have embraced this guidance and incorporated into design, manufacture, operating manuals, training and monitoring of work. The Forest Industry Safety Council (FISC) has recently established a Technical Action Group (TAG) to advance the production of a NZ Steep Slope Harvest BPG which will be based on designer, manufacturer, operator and forest managers experience, practices and guidance. Worksafe has been invited to contribute. Again, we believe this demonstrates further commitment to industry led continual improvement and sound risk management.

This discussion also needs to consider imported plant. To date the majority of WAM plant operating in NZ has been designed and manufactured in NZ. More recently we've seen the arrival of imported plant, principally from Europe and North America. This plant is typically referred to as Traction Aid (TA) and has been designed and built to a range of internationally recognised standards. TA is a working method in which a forest machine is uses a rope to support the machine's own tractive or braking effort by a regulated pulling and/or braking force. This force is kept constant or regulated according to the slip or other traction defined parameters. The supported machine, when stopped, remains stationary on the slope travelled on without any further rope assistance. TA plant manufactured in Europe may incorporate a European Certification (CE) mark. CE marking involves self-certification and registration with a notified body (non-government). The manufacturer must take certain obligatory steps before the product can bear CE marking. These include a conformity assessment, technical file establishment and the completion a declaration. Associated documentation must be made available to authorities on request.

In principle, this process is not too dissimilar to the design and manufacturing processes used in NZ (without the CE mark – NZ is too small to run a similar system). The designing engineer designs to appropriate standards, the manufacturer builds the machine and the plant is subject to verification before deployment. With respect to information supply, Sec 40 & 41 (HSAW Act) places various duties on the supplier and manufacturer. Sec 168 provides powers of entry and inspection should the regulator require or wish to seek additional information.

Note: The TA winch standard ISO 19472 (Machinery for Forestry - Winches - Dimensions, Performance and Safety — Part 2: Traction Aid Winches) is currently under development. Notably it includes a working coefficient for the rope. *This shall be at least two related to the pulling force of the winch.* For example, if the maximum pulling force is 10t, the rope must have a breaking strength of at least 20t.

The System in its Entirety - when it comes to managing risks associated with plant involved in steep slope harvesting it's important to stress the importance of the 'whole system' and not just an item of plant in isolation. For example, successful winch assisted / traction aid harvesting is dependant not only on the specialised anchor machine or winches integrated into or onto a harvester and/or extraction machine but also on the rope(s), fittings, fixtures, controllers, safety devices and operational practices and techniques. Designers and manufacturers are providing training and producing operator manuals and maintenance schedules to support owners and operators of these 'systems'. To date this is being done well in NZ, despite there being no specific high-risk plant regulation.

With respect to winch assisted harvesting, not a single work-related death is attributable to this activity. We are aware of a single serious injury which was initiated by a failure in a winch component on a bulldozer anchor. The injury occurred when the operator made a fight of flight decision and elected to flee the harvester's protective cab as the anchor machine rolled towards his machine.

Australian experiences – A NZ designer and manufacturer of forestry plant that we spoke to, who has sold a number of items of plant into Australia, has said that with respect to the design regulations, on what they have seen and after talking with contractors, it is the general view that the additional regulated requirements in that jurisdiction are thought to be ineffectual, and have added cost with no commensurate safety benefit.

Question: Does MBIE have any data that confirms that AMR design and item of plant registration regulations have contributed to a measurable reduction in harm in Australia?

European experiences – There have not been any legal regulations for using a traction aid winch in Austria. The German testing system KWF has only issued auxiliary guidelines to the users. These say one should not operate steeper than 60% and the machine must be able to stand alone on the slope without rope. They attach great importance to soil conservation. In public tenders, the usable machines are described and controlled. There are no controls in the private sector. So far there have been no known rope support accidents. For this reason, a regulation was not so important. All are now waiting for the ISO standards [source: Ecoforst].

Balance - we believe that any discussion around high-risk plant requires balance. It needs to consider risks associated with how the plant is used (operating practices) and not just the risks posed by plant per se.

We believe the industry has, over the last decade, successfully self-managed risks associated with tethered mobile plant. We are strongly of the view that non-regulated, self-managed processes using competent persons and risk focused inspections achieves the same outcomes that are being sought by proposed regulation.

It is also important to recognise that soundly designed and manufactured mobile plant, in particular WAM / TA harvesting, is proven and is removing a large percentage of high-risk manual work such as manual felling and manual breaking out for cable operations. So, in essence, high-risk manual tasks are being replaced by deployment of **lower risk** specialised harvesting plant and equipment.

Inspection Bodies – we **support** the concept of and recognise the value in having Chartered Professional Engineers (of an appropriate discipline) or other persons deemed competent by a

national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant.

We believe that designers and manufacturers of forestry plant and importers and suppliers of plant are best placed to provide direction and guidance on key design elements and operating elements that should be incorporated into any formalised regular inspection. Their responsibilities are already established within the HSAW Act and we believe an additional layer of regulated requirements is unwarranted.

WAM industry representatives have agreed that periodic formal inspection of machines is a positive step. This has already been proven to work informally with current manufacturer's supporting their customers by establishing an inspection regime in conjunction with their CPEng and reinforced by additional guidance provided in the Worksafe factsheet. We would prefer seeing an industry led WAM inspection regime that is based on the current yarder inspection model, as opposed to adopting the AMR registration and licencing approach. To this end an on-going inspection framework is currently being explored by industry.

Operator Licencing – we are concerned that if a selection of forestry plant was selected for design and individual item of plant registration, we are surely as small step away from operator licencing. This would have a significant impact on forestry businesses. As stated earlier there are some 300 yarders and 120 WAM in NZ. Introducing an operator licence regime would create significant consequences harvesting businesses, lead and backup operators and their replacement if leaving a business at short notice.

We note that AMR Schedule 3 – High-risk work licences and classes of high-risk work (p.433) does not include forestry work. Given that position, we do not believe operator licensing is needed in forestry in NZ. There is already a requirement on any employer to ensure that an operator is suitably qualified and "competent" to operate a machine. If they are not deemed competent then they fall under several classes of training depending on risk and actual competency. Most principals these days are doing due diligence on contractors and require copies of training and qualification records for the operators on their jobs.

We are **strongly opposed** to operator licencing and see no added value in regulating this area.

Conclusion – WAM and TA plant has been deployed successfully in many countries and due to the technology and standards used, has significantly reduced the risk profile associated with manual felling and extraction of trees.

On balance, we believe industry is best placed to manage on-going inspection of WAM / TA plant which has, for consultation purposes, been identified as high-risk by MBIE. We are **not in favour** the regulated registration of specific items of forestry plant, their designs (and modifications) and potentially licenced operators as a necessary or necessarily positive step forward.

We do **support** the concept of and recognise the value in having Chartered Professional Engineers, or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant where the risk warrants it. As such we put forward an alternative inspection and monitoring option for WAM.

5.1.1 Alternate Proposal

The industry has demonstrated its ability to self-manage current log yarder inspection requirements. The industry has agreed, in principle, that similar inspections for Winch Assisted Machines (WAM) and Traction Aid (TA) would be a positive step it should take to manage risks associated with these operations.

The following is an outline of an industry led system to manage risks associated with WAM or TA operations;

1. PCBU's who design, manufacture, import and supply WAM/TA continue to meet their statutory obligations as set out in Sec 39-42 (HSAW). This includes customer support for new plant.

2. PCBU's that control plant must have systems for monitoring the condition of plant and work practices. They must ensure appropriate training is given and that plant is operated competently. A NZ Steep Slope Machine Operations BPG is developed to support WAM / TA practices and requirements.

3. PCBU'S controlling the worksite or requesting the work, must ensure work is planned and risks are assessed, and that capability and operating limits of the plant and operator competency are considered in such plans.

4. The CPEng / competent person inspection processes are brought under a recognised body (eg: CBIP). A register of inspectors is maintained to ensure inspectors are available to complete inspections as required.

5. WAM / TA inspections are completed in accordance with the aforementioned BPG [under development] and the manufacturers' maintenance schedule. The use of modern electromagnetic testing equipment to assess wire ropes in a non-destructive manner, should be considered.

6. Inspection findings are fed back to designers, manufacturers, owners and operators.

7. The website (currently with FICA) that is maintained for yarder tower inspectors is expanded to incorporate WAM / TA. This will support inspectors operating within the system to share information among themselves for the purposes of improving the general condition of the cohort of yarder towers and WAM inspected and/or serviced by them.

8. The digital development work that has been initiated by FICA (on-line inspection forms and data collection work) is supported by industry.

9. The Operator training and qualification framework that is in place (Level 4 or higher unit standard and/or NZ Certificates) continues to be supported by employers. FISC will investigate to option to add WAM operator certification to its independently assessed on the job professional certifications.

10. An effective distribution network exists to facilitate the sharing of hazard alerts and learnings from any incidents.

We believe the industry deserves credit for the safety and productivity advances it has achieved through the design, manufacture and implementation of mechanised steep slope harvesting systems. This has all been achieved in the absence of regulation. It's been done to make our work places safer, to reduce losses associated with accidents and at the same time improve productivity.

5.2 Yarders

The System in its Entirety - with respect to log yarders, the various rigging, anchoring and extraction attachments are all part of system and a source of risk. To focus on the yarder in isolation would be a mistake.

To the best of our knowledge we are not aware of a single fatality or serious injury due to a yarder plant failure. Industry records show 7 of the 19 work related deaths in the forestry sector between 2008-2017 [referred to in the Consultation document Overview] were associated with cable extraction. Of those, five were the result of being struck by an object on the extraction face (wire rope, shackle or stem), one was the result of a fall into a root plate hole created when a corner block stump failed and the final event was a fall on a yarder deck. While all are tragedies, none are the consequence of a failure of the primary mover - the yarder.

Balance - we believe that any discussion around high-risk plant requires balance. It needs to consider risks associated with how the plant is used (operating practices) and not just the risks posed by plant per se. We believe the industry has, over the last decade, successfully self-managed risks associated with yarders. We are strongly of the view that non-regulated, self-managed processes using competent persons and risk focused inspections achieves the same outcomes that are being sought by proposed regulation.

It is also important to recognise that soundly designed and manufactured plant attachments (ie: a grapple used for log extraction in yarding) are removing a large percentage of high-risk manual breaking-out work. As a consequence, high-risk manual tasks are increasingly being replaced by the deployment of lower risk specialised harvesting plant and equipment.

Inspection Bodies – we **support** the concept of and recognise the value in having Chartered Professional Engineers, or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant.

All yarder tower inspectors, who do not hold a degree in engineering and an IPENZ practicing certificate, are required to use an industry governed system that consists of biennial peer-review competency checks from an independent assessor. There is also a process for on-boarding new inspectors. Current inspection processes require records of inspections and issue of certificates to be kept. On-line systems are being developed to further increase efficiency and effectiveness of these processes. Biennial inspector workshops are also held.

Aging Yarder Fleet

We do concede that the NZ yarder fleet is aging and that is of some concern. Older plant is constantly subject to repair and maintenance. Periodically a yarder will be taken out of service and critical components replaced or refurbished. Such work is then subject to re-certification.

More recently yarders have been subject to additional scrutiny with respect to appropriate guarding to separate workers from risks associated with moving ropes and drums, and engine parts.

We are starting to see a few imported yarders arriving on our shores. These are a valuable addition to the fleet. The industry acknowledges that it is important that these individual pieces of plant meet NZ H&S standards and to this end some pressure needs to be applied to designers, manufacturers, importers and suppliers to ensure necessary standards, particularly around guarding, are met.

We **support** the need for continued annual inspection of cable yarders and five yearly certification of the operator protective structure on anything other than new machines (10 years). We also believe there is scope to consider expansion of the inspection scope based on inspection report findings (trends) as time goes by. There may also be a case for the use of modern electromagnetic non-destructive testing equipment to assess parts which are not viewable to the eye on a periodic basis.

Event Notification - we **reject** the notion that Yarders be regulated because the current definition of notifiable incident, with respect to plant failure, is limited to *"the collapse, overturning, failure, or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with regulations". (***Authorised** *meaning authorised by a licence, permit, registration, consent, certificate, or other authority).*

As such, because Yarder use does not require authorisation, a tip over or structural failure does not require notification, unless a person is injured or the incident meets one of the other reportable criteria. If Worksafe NZ believe the definition is inadequate, then we suggest the focus should be on addressing the definition, not additional regulation.

References

Link to ACOP
https://safetree.nz/wp-content/uploads/2015/02/forest-operations1.pdf

Link to Factsheet
https://worksafe.govt.nz/dmsdocument/701-winch-assisted-harvesting-on-steep-slopes

Worksafe NZ HSWA Bulletin - *Inspection and certification of protective structures on forestry yarders*
https://worksafe.govt.nz/dmsdocument/4113-bulletin-inspection-and-certification-of-protective-structures-on-forestry-yarders

Link to Maintenance of Yarder BPG
https://docs.wixstatic.com/ugd/4bfe64_c96a26a0d0074948b30f7a0f0808be8c.pdf

Comments on specific Consultation points

5.1 Should amusement devices and plant currently regulated under the Pressure Equipment, Cranes, and Passenger Ropeways Regulations be regulated under a single set of provisions for high-risk plant?

Yarders and WAM/TA mobile plant are excluded from PECPR regulations by way of the Schedule 2 exclusion *"Earth-moving and forestry equipment, not including such equipment being use as a crane".*

We are of the view that items of plant requiring CPEng inspection, under current ACoP or BPG requirements, will continue to be successfully undertaken by industry. We concede that the various Approved Codes that impact on this process do require an update and would ask that MBIE support a process to update these.

We also concede that the NZ yarder fleet is aging and that is of some concern. Older plant is constantly subject to repair and maintenance. Periodically a yarder will be taken out of service and critical components replaced or refurbished. Such work is then subject to re-certification. We would be open to further discussion with MBIE as consultation progresses on the best method to achieve assurance that yarders are in sound condition and present minimal risk to those operating or working around them.

We **support** the need for continued annual inspection of cable yarders and five yearly certification of the operator protective structure on anything other than new machines (10 years). We also believe there is scope to consider expansion of the inspection scope based on inspection report findings (trends) as time goes by. There may also be a case for the use of modern electromagnetic non-destructive testing equipment to assess parts which are not viewable to the eye on a periodic basis.

5.2 N/a – forestry

5.3 Will the proposed registers of plant improve the transparency of the regulations and improve conformity in the manner outlined above?

We can see no direct benefit or reduction of risk for Forestry. We believe an adequate yarder register can be maintained via CPEng annual inspection arrangements. With WAM / TA plant design evolving, rigorous design and manufacture standards already in place and proposals to initiate industry led inspection, we do not see benefit in including such plant on a government register.

5.4 Do you agree with the approach to the use of Standards that is proposed?

Support – we agree that professionally qualified engineers who design new or modify plant will be well aware of the standards to be followed for such work. The standards used can be added to plant plates, certificates or manuals. We do not see benefit in regulation that requires registration of a set of design standards (and amendments) or individual items of plant.

We support the statement "*although this places some significance on the credentials and competency of engineers and designers, we consider the engineering professions in New Zealand to be well developed and able to continue this approach".*

5.5, 5.6, 5.7 - not relevant to Forestry

5.8 Should there be a new central register of plant designs, maintained by WorkSafe or a delegated agency?

Not Supported – we so not support the inclusion of forestry plant designs on a new central register. The industry has and continues to demonstrate we can self-manage risks associated with mobile plant.

We have concerns about currency of a proposed register. WAM design refinements are constantly evolving and feedback we've received it that a design would barely have completed the registration requirements phase before a design modification comes along. There would be copyright issues, a large administration cost and no added safety benefit.

We believe it is better to focus efforts on owners and operators to ensure maintenance and inspections are being kept up to date and that manufacturers continue to conduct period time or use based inspections. As such, and as started earlier, we do **support** the concept of and recognise the value in having Chartered Professional Engineers (of a related discipline), or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant where the risk warrants it.

5.9 What types of plant should be included (based on, but not limited to, the list in *Annex One*), with attention to the inclusion of pressure piping, cylinders, refrigeration systems, model engineering, heritage boilers and new types of plant discussed at p 92?

Not supported – p.92 lists *forestry equipment, including for mechanical harvesting and cable logging.* We believe the case to include this plant in a central register of designs and registration of items of plant is not strong enough.

5.10 What standards should apply, and what regard should be had, to seismic performance when registering designs, as distinct from individual items of plant?

N/A – seismic performance not relevant forestry plant but does have relevance to structures (roads and bridges)

5.11 Is an "alteration that may affect health or safety" an appropriate threshold for requiring alterations of designs to be verified/re-registered?

See 5.8 – the central register concept for forestry plant is not supported.

5.12 What threshold(s) should apply to the registration of designs of heating/cooling equipment?

N/A – design of heating/cooling equipment not relevant forestry

5.13 Should designs of model engineering and/or (full scale) heritage boilers be required to be registered?

N/A - forestry

5.14 Should designs registered on Australian state registers be recognised in New Zealand?

We would add that European CE marked plant would also need MBIE's consideration.

5.15 Would you expect benefits from alignment and interoperability with the Australian state registers?

We are not enthusiastic about this. On the one hand MBIE appears to be keen on many aspects of AMR but then, in a forestry context at least, must be prepared to accept that the Australian regulator has not included forestry plant within its high-risk schedule.

5.16 Do you support the introduction of a centrally held register of individual items of high-risk plant currently subject to the Pressure Equipment, Cranes, and Passenger Ropeways Regulations?

We are not enthusiastic about this. The basis for our position on this has been conveyed earlier in this submission.

5.17 What types of plant should be required to be registered (based on, but not limited to, the list in *Annex Two*), with attention to the inclusion of pressure piping, refrigeration systems, model engineering, heritage boilers and new types of plant discussed at p 92?

No forestry plant – there is no risk to the public and if well managed well no risk of multiple injuries / fatalities to the workforce. Registration of plant design won't change this – it's sound work plans, operator competency, fit for purpose machinery and how the work is managed that dictates the H&S outcomes. Accident data tells us it's the way work is performed and failures in the broader system that are a larger contributor to accident causation. The focus must be on risks associated with the overall system not confined to the piece of plant.

5.18 Should forestry plant, like that recommended to be inspected by CPEng under forestry codes or guidance, be required to be registered?

Not supported for the reasons set out in the Discussion section above. We propose an industry led risk management approach for new WAM/ TA deployments as set out in the Alternative Proposal section above.

5.19 What scale or risk categories of pressure equipment should be required to be registered?

No comment – not relevant to Forestry

5.20 What threshold(s) should apply to the registration of individual items of heating/cooling equipment?

No comment – not relevant to Forestry

5.21 Should individual installations of model engineering and/or (full scale) heritage boilers be required to be registered?

No comment – not relevant to Forestry

5.22 Do you agree with the proposed requirements for registration?

Not supported – we believe the risks associated with forestry plant currently managed in a non-regulated regime do not warrant registration of design, items of plant and/or licences

5.23 Should registration be for a 5-year period for all items of plant or for a lesser period for different items of plant (refer to inspection requirements below)?

No Comment – not supported

5.24 What regard should be had, and what standards should apply to the seismic performance of individual items of plant?

No comment – not relevant to Forestry mobile plant

5.25 Should specified types of existing plant be required to be assessed for their "remaining design life" and/or should safety critical aspects of their design be reassessed as a precondition of their registration as items of plant?

Not supported – this can be achieved through non-regulated industry led inspection systems and processes. Inspection of safety critical aspects are included in inspections. Aspects associated with aging plant that have been identified by inspectors are given due consideration by the inspector group. Inspection sheets are updated to reflect emerging risks.

Yarders that are subject refurbishment require certification before re-deployment.

In addition, industry hazard alerts, from NZ and overseas relating to risks associated with specific plant are shared through existing networks. (Eg Madill top of tower issues).

5.26 Should other categories of existing items of plant be exempt from the requirement to be design registered before registration as items of plant?

Yes, forestry Yarders and Winch Assisted Machines / Traction Assist plant used in harvesting operations.

5.27 Should existing accreditation requirements for inspection bodies and inspection personnel be retained for equipment currently under the Pressure Equipment, Cranes, and Passenger Ropeways Regulations?

No Comment

5.28 Should the current requirement for a CPEng (or equivalent) to certify and inspect amusement devices be retained?

N/A - forestry

5.29 Should inspection bodies and personnel be able to maintain the register, based on their inspection work?

Supported - agree, as currently happens with yarder inspections although the process could be do with a tidy up (which industry is working on). Currently the Inspector and the machine owner both retain copies of inspections.

5.30 What level of detail should the regulations specify concerning the periods of inspection, the applicable standards, and the matters subject to inspection for different classes of plant?

No Comment

5.31 What level of detail in describing competencies should be included in regulations for high-risk plant?

We note that MBIE *propose to review the licensing and competency of operators of high-risk plant when developing separate regulations for high-risk work, but in the interim we are interested in your views on the level of detail in describing competencies that should be retained in regulations for plant and structures". P107*

We note that AMR Schedule 3 - High risk work licences and classes of high-risk work (p.433) does not include forest harvesting activities or plant.

It is important to note that industry has developed a qualification for WAM operators. This was developed for industry by Competenz and the first tranche of operators have just completed the units.

5.32 What inspection requirements should be contained in safe work instruments or approved of codes of practice?

Supported – the forest industry currently manages this using a Best Practice Guidelines for Maintenance Inspections of Yarder Towers. Similarly, a decision has been made to produce a BPG for Winch Assisted Harvesting. Work will commence on the in Q4 2019.

Industry would have no objection to including CPEng inspection requirements into a suitable code or BPG (as discussed earlier in this section)

5.33 – 5.35

No comment – not relevant to Forestry

5.36 Should the existing "type fault" provisions in the Pressure Equipment, Cranes, and Passenger Ropeways Regulations be retained in new regulations for high-risk plant?

No comment

5.37 Which incidents involving different categories of high-risk equipment should be notifiable to WorkSafe?

Event Notification - we reject the notion that Yarders be regulated because the current definition of notifiable incident, with respect to plant failure, is limited to *"the collapse, overturning, failure, or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with regulations". (***Authorised** *meaning authorised by a licence, permit, registration, consent, certificate, or other authority).*

We support the current list of Notifiable Events as defined in the H&SAW Act. We see no need to include any additional incidents related to forestry activity. If Worksafe believe the definition is inadequate, then tidy up the definition.

5.38 Do we need additional requirements on upstream duty holders in relation to high-risk equipment?

No – adequately covered in the H&SAW Act. In our experience Designers and Manufacturers of specialised forestry equipment are aware of their responsibilities.

5.39 Do you agree with a prohibition on supplying plant that is not design registered when it is required to be?

No comment

5.40 Based on the proposals you have commented on in this section on high-risk plant, are there any significant costs and/or benefits that will affect you or your organisation?

We are finding it difficult to see where any real benefit would accrue to any party designing, owning or operating specific forestry plant that has been mooted for design and registration. The reasons for our position have been stated earlier in this section.

Section 6 – Working at Heights

We note that the consultation document is mainly focused on the Construction industry, but there is a section on tree work. Our submission is straightforward. Commercial pruning is different to Tree Lopping and the industry currently operates with a well thought out set of practices that have been previously agreed with stakeholders and incorporated into a BPG.

We submit that when MBIE considers new or amended requirements around working at heights that commercial tree pruning is not inadvertently impacted by a change in definition or requirements around tree looping or arborculture work.

Working at Height - Pruning using a Ladder - the industry, in conjunction with the then Dept of Labour (DOL), developed a process to cover workers undertaking ladder pruning operations. The procedures are documented in the BPG Silvicultural Pruning.

DOL, pruning workers / contractors and the NZFOA investigated pruning at height operations (including field visits) and developed an agreed process (2005) that has delivered a safe and practical operational system that allows workers to work from 3m – 4.5m (height of the feet) without the need for a "work positioning device". Analysis of the FOA Incident Reporting Information System (IRIS) database over the last five years shows there is not an issue with falling from height while pruning (results available on request).

The key feature of the agreed system is that only workers deemed competent can operate without a "work positioning" device above 3m, but below 4.5m.

The following practice within the BPG (P.10) is important;

- *When carrying out pruning from a ladder, the operator must wear a work positioning device once they reach 3 metres (the height of the operator's feet from the ground). UNLESS:*
- *The operator has demonstrated to their supervisor his/her competency to undertake pruning from a ladder (manual or chainsaw pruning).*

The BPG clearly lays out the required process to deem a worker "competent" and exactly what a "work positioning" device is.

Competency - where the employer (or supervisor) has deemed an employee to be "competent", the employer shall maintain detailed documented evidence showing:

- *The task the worker was carrying out.*
- *The situation the worker was carrying out the task in.*
- *Who deemed the worker competent and their qualifications and/or experience.*
- *How long the competency assessment took and when it was carried out.*
- *What visual demonstrations were observed to show competency, and*
- *The worker is working towards NZQA Unit Standards for: either Chainsaw pruning units 6949, 6973, 6972 or Manual pruning units 6949, 1243, 1245*
- *Work positioning devices are used when the operator is in training and working with the feet 3 metres or more above ground, until competency is reached as described above.*

Operators must use a work positioning device at all times when pruning with their feet 4.5 metres or more above the ground.

Reference: https://safetree.nz/wp-content/uploads/2015/03/Silvicultural-Pruning.pdf

Rigging Elevated Supports for Cable harvesting

From time to time a harvesting contractor may elect to use tree spars to provide addition lift for a selected cable extraction system. The frequency of using such elevated supports is extremely low. The industry, in conjunction with WorkSafe has included clauses in the Approved Code of Practice for Forestry Operations under section 14.7 – Tailspars to set safety expectations for this activity. Basic requirements are as follows:

14.7.1 – Trees used for elevated supports must be topped and secured with guylines.

14.7.2 – Hanging block systems shall be used where ropes are elevated.

14.7.3 – At least two competent persons shall be present when tree topping and rigging is being done and the second person shall have both the equipment and skills to effect a tree rescue if required.

Best practices for this activity are set out in the Cable Logging BPG.

A level 4 NZQA unit standard 17764 entitled “Plan and rig an elevated support system for a cable harvesting operation” encapsulates the necessary skills required to plan and rig an elevated support system. While the uptake of this unit standard has been relatively low, it remains fit for purpose. This unit was developed in 2000 and the last review was in 2015. This unit is also supported by unit 23097, “Rescue an injured or disabled person from a tree”.

A review of 15 years of harvesting harm related events did not locate a single tree rigging accident resulting in harm. This supports our view that the likelihood of an accident occurring whilst undertaking this activity is extremely low. To further add weight to this conclusion, increasingly mechanised extraction systems (eg: grapples) do not use elevated intermediate rigging supports.

On this basis, we believe that the industry is managing the risk of rigging tail spars and intermediate supports for cable logging operations and regulation of the task is unnecessary.

Reference:

https://www.competenz.org.nz/assets/Uploads/Cable-Logging-2018.pdf

Section 7 - Excavations

Trenches (7.1)

Excavation work in forests is generally associated with road and landing construction, quarrying activity and a specific hauler anchoring system known as placement of 'dead-men'.

Road and landing construction excavations typically involve cut and fill earthworks, construction of water control structures (berms, water tables, soak pits, culverts, fords and bridges) and non-complex quarry work.

Trenching greater than 1.5m in depth is limited to;

(a) construction of trenches for placement of pipe culverts or box culverts. Ordinarily, neither require a person to stand in an excavated trench > 1.5m in depth.

(b) preparation of a 'deadman' hole. This is a pit that's an excavator bucket width wide, at least 5m long and 4m deep. One or two logs are buried in the trench at right angles to the proposed direction of pull. The log(s) have a strop around them to which the load rope is shackled. At no time does a person enter a deadman pit.

Current Controls

With respect to quarrying, the industry is aware of the requirements of the H&S at Work (Mining and Quarry Operations) Regulations 2016.

Industry standards for road and landing construction are set out in an industry publication called the Forest Road Engineering Manual (2012) and associated Operators Handbook. These are both under revision, in-part due to the development of the National Environmental Standard-Plantation Forestry regulations (2017). The revised manual includes a specific check for underground (and overhead) infrastructure is part of the planning process. This small addition will improve consistency in the road engineering and harvest planning process.

H&S requirements are defined and managed in accordance with the Approved Code of Practice for H&S in Forestry Operations.

Supervision, training and competency is managed in accordance with Sec 9 of the General Risk and Workplace Management) Regulations 2016

Relief Sought

We **support** the retaining the status quo, that is requirements for excavations with a face more than 1.5 metres high as set out in Sec 24(2) of the H&S in Employment Regulations 1995. This definition allows for low risk work commonly carried out in forestry to be un-shored.

We **oppose** non-complex trenching or pit digging (described in (a) or (b) above) being classified as *"high hazard construction work",* and thus attracting more stringent requirements.

If MBIE do intend to classify all trenching > 1.5m as high hazard work, then the forest industry seeks exemption for its culvert placement and 'dead-man' anchor pit works. Alternatively, a more explicit high-risk trench definition could be developed which excludes any trench or pit where no person will enter the excavation.

Q7.9 Should the current competency and supervision requirements for excavations be retained, or prescribed further?

We **oppose** more stringent levels of competency for forestry excavation work. There is simply no justification for operator licencing or higher levels of training for such works. As such we also **oppose** the suggestion that prescribed qualifications and/or experience would be necessary for un-shored excavation work as set out in Sec 24(2) of the H&S in Employment Regulations 1995.

Underground Services (7.2.2)

MBIE propose a new duty under which any PCBU with management or control of a workplace, where excavation work is to take place, would be required to do what is reasonably practicable to identify all underground services before excavation work commences. We agree with, in principle, the outcome MBIE is seeking to achieve but believe adding yet more regulation is not necessarily the best method to achieve this.

Forestry has well established planning processes for road engineering and harvesting. Amongst those processes are confirming the location of underground services before works commence. Larger forestry companies have GIS systems which record this information, which is then passed onto the contractor undertaking the works. Where this process is not available, the person responsible for initiating the works (paying for the work to be done) will contact the land owner and ask about the location of services and/or use a service such as 'BeforeUDig". Appropriate controls can then be developed.

These are all 'reasonably practicable steps' as required by Sec 30 of the H&S at Work Act.

Relief Sought

We **oppose** additional regulation low risk non-complex trench or pit work.

Appendix 1

Yarder Terminology & Requirements

The term “yarder” refers to integral and free-standing tower haulers and swing yarders. there are approximately 300 log yarders in NZ.

Frequency of Yarder inspections
Tower inspections shall be performed:

- Three years from the commissioning (new) date and then annually thereafter
- Before a newly imported second-hand yarder starts work
- Before commencing work where a machine has been idle, and the tower inspection certificate has expired

In the case of a tower tip-over, reinspection is required before operations recommence.

To ensure that the tower has a current yarder tower certificate, the repeat inspections should be scheduled to allow any repairs to be made before the previous certificate expires.

The Approved Code of Practice for Safety and Health in Forest Operations requires;

- All yarder towers shall be inspected annually by a competent person and tagged as certified. Information on the certification plate shall include:
  - › owner of the mobile plant
  - › make, model, serial number
  - › inspection expiry

The ‘competent person’ undertaking these inspections are personnel certified by national Certification Board for Inspection Personnel (CBIP) or a Chartered Professional Engineer.

A Chartered Professional Engineer shall ensure modifications and structural repairs:

- › do not reduce the original safety factor of the equipment
- › are recorded on an identification plate showing the name and address of the CPEng and the date of modification.

Yarder OPS (2018)
Should have current certification according to the following standards:

OPS: Operator Protective Structure: ISO 8084: 1993 or 2003, WCB 608 or SAE J 1084
FOPS: Falling Object Protective Structure: ISO 8083: 1989 or 2006, WCB 601, 602, 603 or SAE J1043.

These OPS certifications may be:

- ten years if issued by the original manufacturer (or by a chartered professional engineer)
- five years if issued as a recertification.

Subsequent ‘fit-for-service’ OPS inspections are an annual requirement.

Appendix 2

Other Current Industry led inspections

The following are the areas where CPEng inspections / competent persons inspections are currently applied as a sensible risk reduction tool (ACoP requirements).

ROPS/COPS/FOPS/OPS are inspected on a differing but recurring basis. Most but not all ROPS cert plates expire after a period of time (typically 5 years) after which owners are required to get a CPEng to inspect and recertify. This applies to roading, logging diggers, dozers etc –anything with an aftermarket and not factory ROPS structure.

Winch Assist Machine (WAM) - there are approximately 120 Winch Assist Machines (WAM) operating in NZ. Many more have been sold to other jurisdictions, including Australia, Canada and the USA

- All mobile plant using the assistance of a wire rope and/or winch shall be specifically designed, tested, demonstrated to be safe, and certified by a Chartered Professional Engineer to be safe when operated on steep slopes.
- The tension on the wire rope shall be restricted to 33 percent of its breaking load at all times.
- The maximum operating weight of the mobile plant shall not exceed the rated breaking load of the wire rope.
- An emergency back-up system shall be incorporated into the operation to ensure the stability of the mobile plant should the winch, wire rope or anchor fail.
- All winch-assisted mobile plant operations shall have a documented safe working best practice, including as a minimum:
    - › hazard management
    - › machine and wire rope inspection and maintenance routines
    - › operator fatigue plans
    - › work alone procedures
    - › an emergency plan.
- All winch-assisted mobile plant shall be constructed to provide adequate emergency access and egress points that can be activated internally and externally.

The ‘Winch-assisted Harvesting on Steep Slopes’ fact sheet [Worksafe NZ] sets out additional guidance.

See Sec 5 References for document links

Acknowledgement

The joint submitters wish to acknowledge the contributions of the following parties in preparing this submission.

FISC Plant and Structures Technical Action Group (TAG) members: Chris Hancock – EMS; Jack Mains – Mainmech; Lars Rosewarne - Rosewarne Cable Logging; Glen Coleman - Hancock Forest Management; Barry Wells – Blakely Pacific; Guy Gaddam - Gaddum Construction; Wayne Dempster – Rayonier Matariki Forests.

NZFOA Representatives: Glen Mackie & Peter Weir

FICA representatives: Prue Younger, Ross Davis and Dale Ewers

The FISC Operational Advisory Group and Council