PART C

Site access and preparation of log landings

IN THIS PART:

TERM OR SYMBOL	MEANING IN THIS DOCUMENT
Must	A mandatory legal requirement under HSWA or regulations.
Other wording including 'check', 'make sure', 'design', 'do not'	How WorkSafe expects certain health and safety risks to be managed. This is not mandatory to follow – you may adopt other practices, as long as these practices provide a level of health and safety as good as or better than the standard in this code.
You/your	Refers to the PCBU involved in forestry and harvesting operations.

14.0
Introduction to Part C

IN THIS SECTION:

14.1 What does this Part cover?

14.1.1 This guidance looks at how to manage the risks around roading, construction and access in forestry and harvesting operations.

14.1.2 There are sections on:

- constructing and maintaining access roads
- constructing crossings
- constructing log landing and loading areas
- traffic management and signage
- marking ropes rigged across roads
- controlling authorised visitors.

14.2 What are the common health and safety risks faced by workers constructing or using access roads and landing sites?

14.2.1 Table 13 gives examples of how workers can be harmed.

14.2.2 There may be hazards that are not identified in this table. You will need to identify and assess health and safety risks arising from your own work.

WHAT COULD GO WRONG?	POSSIBLE CAUSES
Mobile plant comes off the road during construction or later road use	– Plant slips down moderate to steep slopes due to distraction or road failure. – Poorly constructed narrow roads fail.
Workers injured by mobile plant	– Small or poorly designed landings cause congestion and make it difficult for vehicles and machinery to work safely around other machines and pedestrians.
Shared access/general driving	– Loose gravel. – Log trucks.
Landslides endanger workers, block access to forestry site	– Poorly constructed earthworks leading to sediment and debris flows and build-up during heavy rain.

TABLE 13:
Examples of what could go wrong – roading, construction and access

14.2.3 The following guidance provides good practice on how to manage these risks. To manage the health risks, see Section 3.5.

14.2.4 Guidance that is common to activities (for example, on requirements for worker training) has been placed in Part B.

14.2.5 See Appendix 6 for an approach to manage health and safety risks.

15.0 Managing the risks from site access and preparation of log landings

IN THIS SECTION:

15.1 Duty of PCBUs who manage or control the workplace

15.1.1 A PCBU who manages or controls a workplace **must** ensure that, so far as is reasonably practicable, the workplace, the means of entering and exiting the workplace, and anything else arising from the workplace are without health and safety risks to any person.

15.1.2 You do not owe this duty to anyone who is at the workplace for an unlawful purpose.

15.2 Constructing and maintaining access roads

Constructing access roads to harvesting sites, log landings or processing areas

15.2.1 Construct and maintain roads to the engineering standards appropriate for their intended use. See the *New Zealand Forest Road Engineering Manual*.

15.2.2 When constructing access roads:

- make sure the road is built to the correct width and gradient as outlined in the *New Zealand Forest Road Engineering Manual*
- consider waterways (dry or flowing) and the impact they might have on any roading in heavy rain
- check the initial road construction plan and remove overhead hazards from road, bridge and log landing construction areas
- if the road areas are adjacent to a moderate-steep slope:
  - put in place control measures to prevent machinery slipping down the slope
  - there may also be risks from upslope hazards to be managed
- remove hazardous trees
- make sure felled trees are clear of standing trees and left in a safe position
- mark or tape off any dangerous areas
- use safe systems of work such as traffic management plans which allow road users and adjoining landowners to pass through and around the road works when it is safe to do so.

Maintaining access roads

15.2.3 Unsealed access roads can deteriorate and put workers and other road users at risk.

15.2.4 Maintain roads to ensure a reasonable quality road surface.

15.2.5 Put in place traffic control measures as needed during maintenance. See the *New Zealand Forest Road Engineering Manual*.

15.3 Constructing crossings

15.3.1 Design and construct crossings and their approaches to engineering standards appropriate for their intended use. See the *New Zealand Forest Road Engineering Manual*.

15.4 Constructing log landings or log loading areas

15.4.1 Design and prepare log landing or loading areas to allow safe operations. This can be done by:

- managing the risk from surrounding trees
- managing the risk of earthflows
- minimising where workers and machinery interact.

15.4.2 There are many factors that can affect the size and shape of log landings, including the:

- terrain, soil types and underlying geology
- size and type of yarder and associated stem landing area (less than 3% fall)
- processing area needed
- loader configuration
- log capacity
- log size and length
- space available (topography).

15.4.3 Consider the size, location and layout of landings in the early harvest plan. Ideally all PCBUs (and their workers) work together to identify the most effective and safest sites and harvest systems when designing the landings.

15.4.4 Have landing areas that:

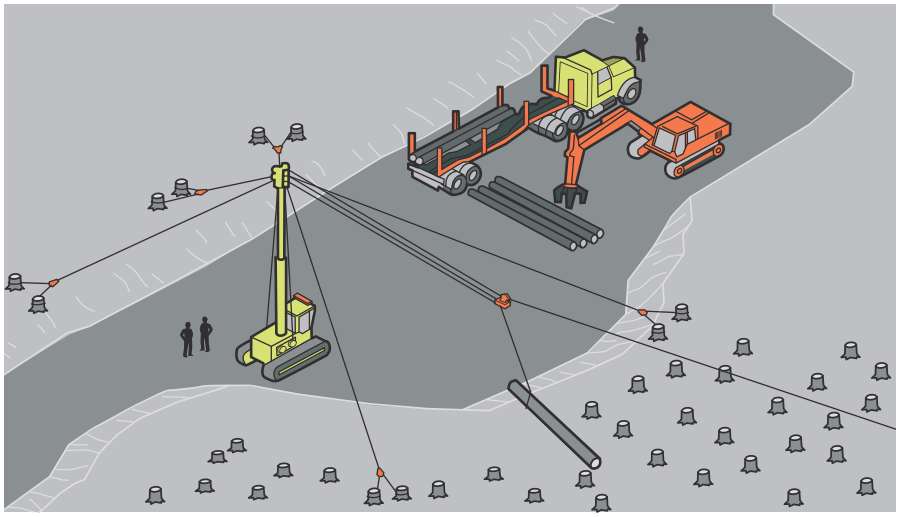
- have a solid and flat foundation (for example, for loading so logs will not slide or roll towards workers or equipment)
- have good water control (for example, good ground water drainage) so log trucks do not get stuck or require assistance to access or move about the landing
- are cleared of hazardous trees, particularly those trees:
  - leaning towards the landing
  - on the prevailing wind side
  - disturbed during landing construction
  - in or leaning into the corridor of the guyline
- are clear of any powerlines or have powerlines with specified safe zones under and around them.

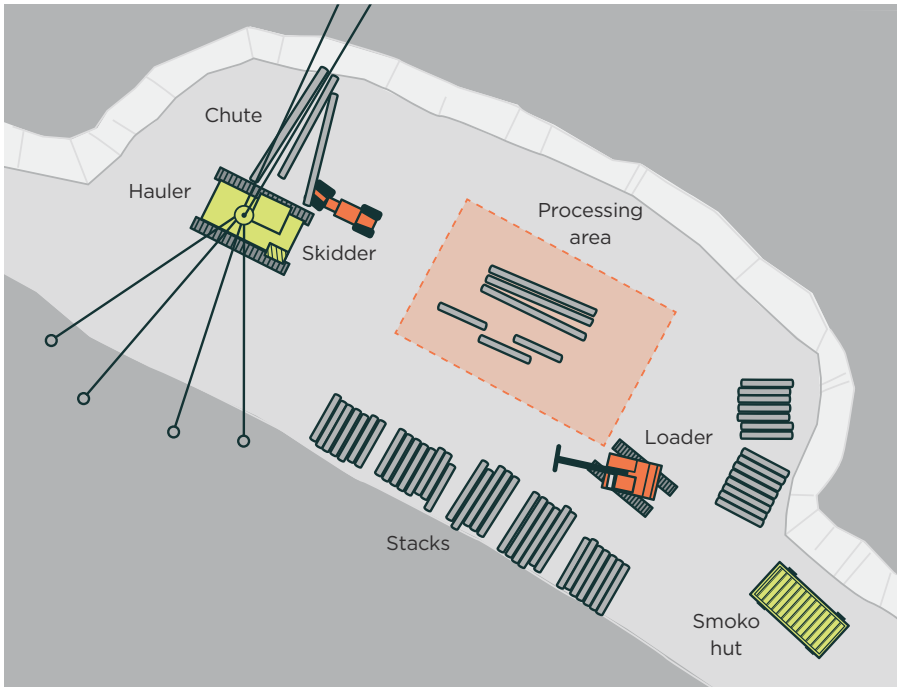
15.4.5 Make sure landings:

- allow traffic to pass the operation safely
- allow operators to easily see anyone arriving at the landing
- have visitor control procedures
- allow the safe entry and exit by all truck types
- allow for parking, turning and moving mobile plant and trucks (this may require berms)

- have space for inspecting, maintaining and repairing mobile plant
- have a safe and level loading zone for log trucks and trailers, and a safe area for drivers to view the loading process
- have separate working areas for each landing activity with suitable separation distances. For example, for activities like:
  - loading
  - stacking (logs to be turned and swung without hitting standing timber, rigging or other equipment or objects) and measuring
  - log quality control checks
  - saw sharpening by ground workers
- allow at least two-thirds of the stem/drag to be landed safely and securely (for hauler operations), or if this is not practicable have alternative means to manage the risk of stems sliding back down the hill
- have sufficient space for the number of products to be safely stored, loaded and for the volume of wood to be handled
- have sufficient space for any slash and processing debris to be held on site
- have compliant storage areas for chemicals and fuel
- have space for parking worker vehicles safely away from landing activities
- have space for a sheltered smoko/rest area
- have a safe location for the toilet. If there is no safe area on the landing, chose a reasonably accessible and safe location nearby.

15.4.6 Figure 14 shows examples of different landing sites.





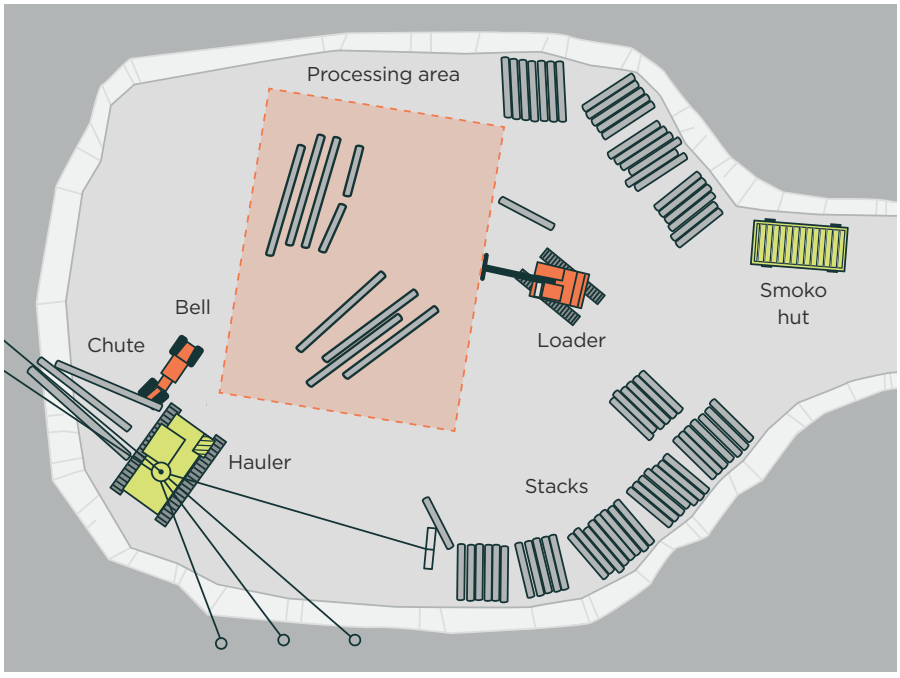


FIGURE 13:
Examples of landing sites[1] (processors not shown)

[1] Adapted from Safe Work Australia's guidance: Forestry: Guide to managing risks in cable harvesting (2013) and Safetree Best Practice Guidelines for Cable Logging (2005)

15.4.7 For downhill yarding, make sure landings are large enough to have sufficient space between the base of the slope and the tower to allow for safe landing of logs without endangering the yarder. It is industry practice to have at least 1.5 tree lengths (Figure 14).

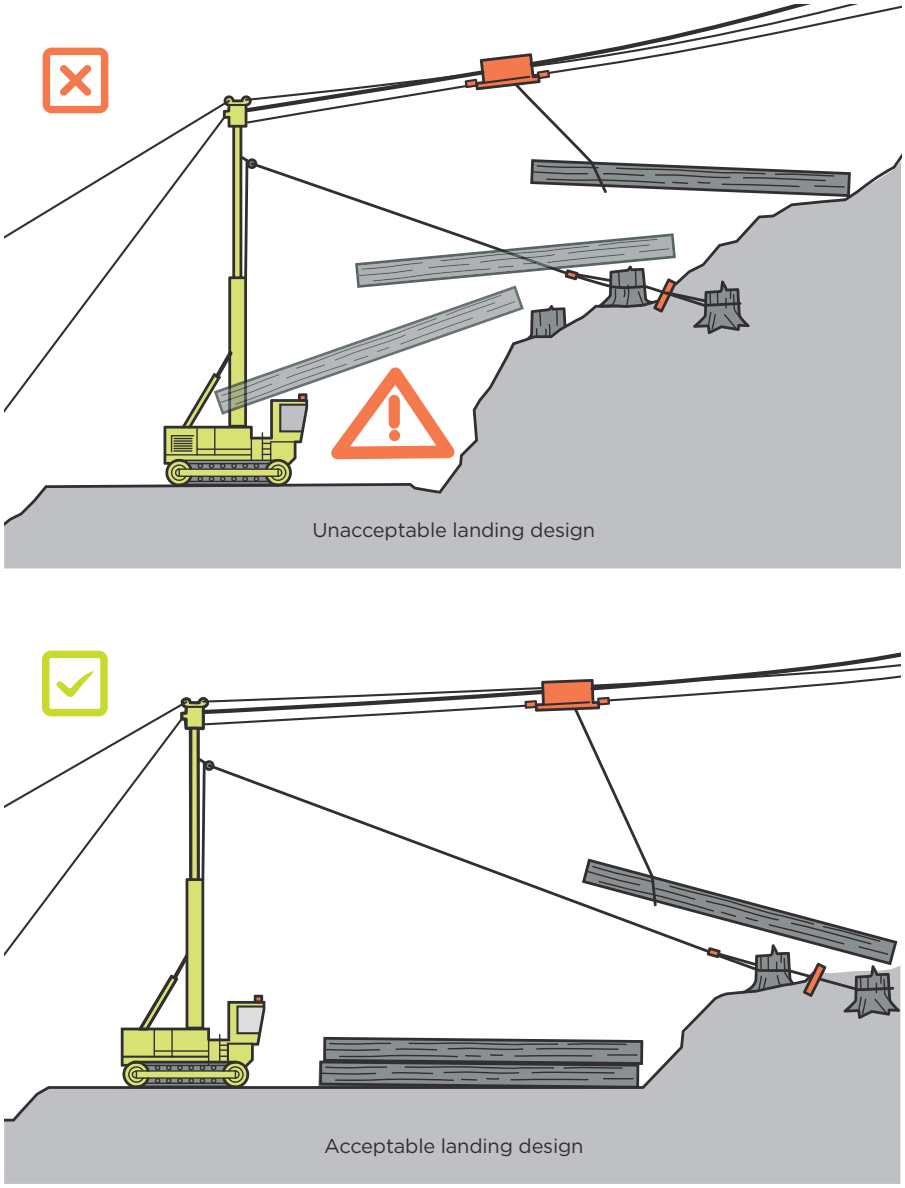


FIGURE 14: Landing design for downhill yarding[2]

15.4.8 For more information on different landing layouts, see the *New Zealand Forest Road Engineering Manual*.

[2] Adapted from Safe Work Australia's guidance: Forestry: Guide to managing risks in cable harvesting (2013)

15.5 Traffic management and signage

Managing traffic

15.5.1 Make sure you have a plan to manage traffic agreed to by the person or entity who controls the road.

15.5.2 Who this is will depend on the type of road. In general:

- for public roads, the road controlling authority (RCA) is usually a local council (for local roads) or the New Zealand Transport Agency (NZTA) (for state highways)
- for private roads, the person controlling the road could be the forest owner, the landowner or a utility owner.

15.5.3 The *Best practice guidelines for temporary traffic control on private forest roads* has specific guidance on:

- direction and protection signs, and usage
- banners and barriers used for road closures
- planning and application.

Signage

15.5.4 Make sure signage is clear and readable, and appropriate for the work being carried out. Use reflective signage for operations carried out in the dark.

15.5.5 Examples of signs include 'Tree Felling', 'Logging Operations' and 'Road closed' (Figure 15).

FIGURE 15: Examples of signs for tree felling operations

15.6 Traffic entering and exiting the forest

15.6.1 Make sure that all traffic entering and exiting the forest on access roads or using forestry roads is managed safely by:

- using signage at the entrance to the forest to indicate the correct radio channel and to turn lights on
- including easily visible road markers at appropriate intervals so traffic using forest and access roads can call their position on the roads
- using correct signage to warn road users when they are approaching logging operations
- using signs including contact details and RT channel to instruct the driver to stop and contact a supervisor for authorisation to continue to the worksite.

15.7 Marking ropes rigged across roads

15.7.1 Clearly flag or mark any static ropes rigged across any road for road users.

15.7.2 Install signposts to warn of clearance restrictions where any overhead ropes are lower than 6m above the road surface when slack.

15.7.3 If any of the ropes rigged across the road are operating ropes, put traffic control measures in place.

15.7.4 Do not allow vehicles under operating ropes when the ropes are in use.

15.8 Controlling authorised visitors

15.8.1 Put in place arrangements to manage visitors to the work area including providing a site induction.

15.8.2 The site supervisor needs to ensure visitors:

- have been briefed on hazards that may impact their health and safety
- understand and comply with safe work procedures
- have and use PPE where it is required.