

Reducing the risk of workers being struck by vehicles or mobile equipment

Guide to using the fillable template

Every year, serious injuries and fatalities occur when workers on foot are struck by vehicles or mobile equipment (such as forklifts, excavators, trucks, and graders) on worksites. These events are known as *struck-by incidents*.

This guide describes how employers can complete each part of a fillable [template](#) designed to help them reduce the risk of struck-by incidents on worksites. A related [information sheet](#) provides more details on struck-by incidents, the factors that contribute to them, and effective options to reduce the risk.

This guide shows how to use the template to identify where on your worksite vehicles or mobile equipment operate near workers on foot. These situations increase the risk of struck-by incidents.

Use the guide alongside the information sheet to identify the following:

- Areas where vehicles or mobile equipment operate near workers on foot
- Factors that contribute to the risk
- The most effective ways to reduce the risk, as set out in the hierarchy of controls

The hierarchy of controls (see Figure 1) ranks control options from most effective to least effective, as explained in the [information sheet](#).

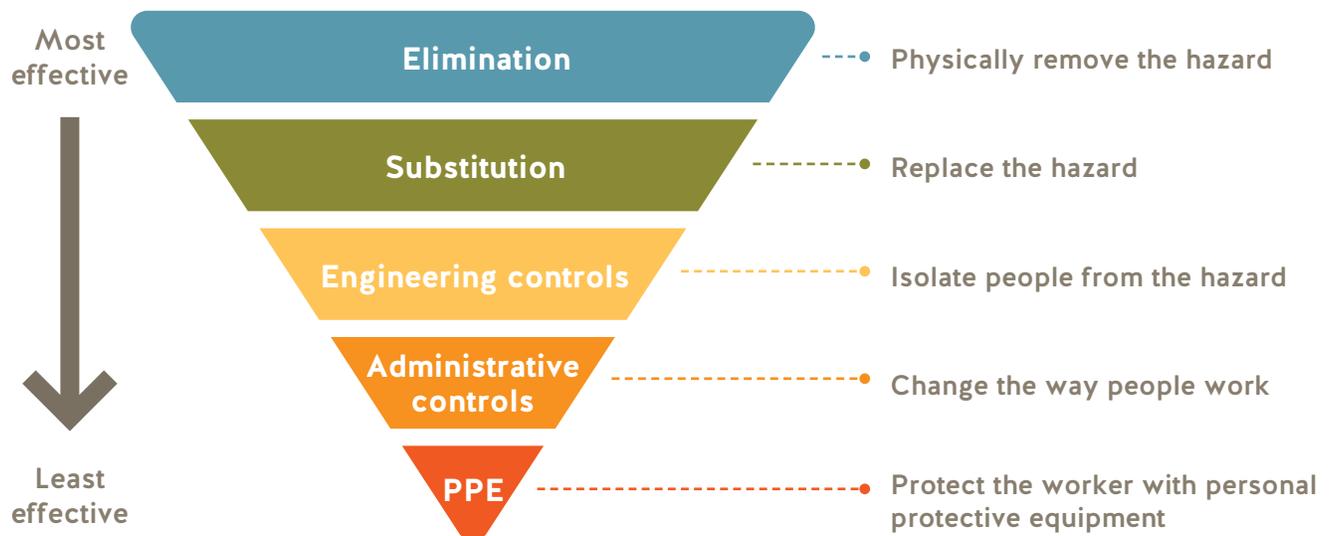


Figure 1: Hierarchy of controls

Use this guide and the template to determine ways to eliminate or minimize the risk of struck-by incidents:

- At the start of new projects
- When site conditions change
- As often as needed

The goal is to ensure that hazardous interactions between vehicles or mobile equipment and workers on foot are eliminated on your worksite.

Identify the areas of concern

The first step in preventing struck-by incidents on your worksite is to identify where vehicles or mobile equipment operate near workers on foot.

Step 1: Draw the layout of your worksite.

Assess your worksite and observe all work areas where vehicles and mobile equipment operate near workers on foot. Use the space provided in the **template** to draw the physical layout of the worksite as you see it. A sample layout is shown on the next page. Depending on your worksite, the layout may include the following:

- Buildings
- Foot traffic areas
- Break areas
- Loading or unloading and storage zones
- Vehicle or mobile equipment travel routes
- Access or exit points
- Parking areas
- Temporary services

Note

For larger or more complex worksites, you might need to make extra copies of the template. This allows you to break the worksite into smaller sections or individual work areas.

Step 2: Circle areas where vehicles or mobile equipment operate near workers on foot.

On your drawing(s) of the worksite layout, circle every location where vehicles or mobile equipment are close to workers on foot. In particular, consider locations where:

- Tasks require workers to interact with vehicles and/or mobile equipment.
- Multiple contractors share a common work area.
- The physical space is narrow, hard to move around in, or restricted in some other way.
- Various types of vehicles and/or mobile equipment cause congestion in the work area, while workers on foot perform tasks nearby.

For easy reference, number each location that you've circled, as shown in Figure 2.

Control the risks

Use the table in the fillable template to describe the task(s) and the factors that contribute to the risk for each of the locations you circled and numbered on your drawing. Then determine effective controls for each instance to eliminate interactions where possible. A sample completed table is shown on page 5.

Step 3: Describe the task and factors.

In the table, start by specifying one location where vehicles or mobile equipment are operating close to workers on foot.

Then describe the task(s) completed in that location. Each task description should answer the question, "Why are workers near vehicles or mobile equipment when completing this task?" Use separate rows in the table to provide details for each location.

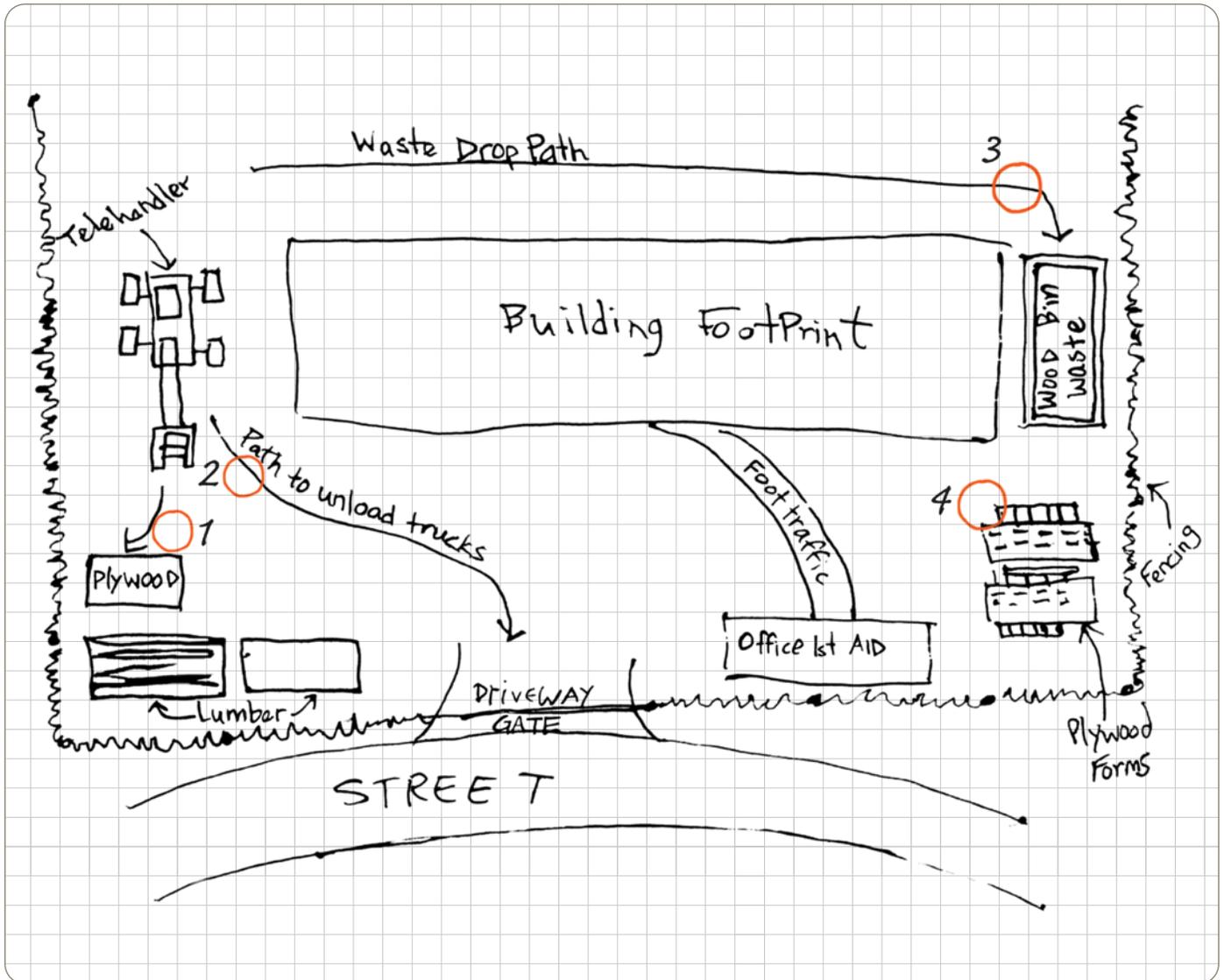


Figure 2: Sample drawing of a worksite layout. The circles indicate locations where vehicles or mobile equipment operate near workers on foot.

Next, list the factors that increase the risk of a struck-by incident or may have contributed to an incident or near miss in the past. Five key factors influence the risk of struck-by incidents:

- Planning and proximity
- Equipment
- Task
- Environment
- People

These factors can interact and may increase the risk to workers.

Use the following sample questions to help you identify factors that increase the risk for each task.

Planning and proximity	<ul style="list-style-type: none">• Do vehicles or mobile equipment operate near workers on foot?• Do workers on foot share a work area with vehicles or mobile equipment?• Do vehicles or equipment move freely about the site?• Do locations and timing of work schedules contribute to interactions between workers and vehicles or mobile equipment?
Equipment	<ul style="list-style-type: none">• Are there vehicles or mobile equipment on site with attachments that have blind spots and limited visibility?• Is there a mix of vehicles and mobile equipment that creates congestion and/or blind spots?• Do any practices or conditions reduce the use or effectiveness of warning devices (flashing beacons, reversing alarms, or cameras or mirrors)?
Task	<ul style="list-style-type: none">• Do tasks require working with or guiding vehicles or mobile equipment, delivering work orders, loading or unloading, and so on?• Do tasks require vehicles or mobile equipment and workers on foot to share the same entrance or exit?• Completing tasks requires focused attention. Do tasks involve any of the following activities near vehicles or mobile equipment:<ul style="list-style-type: none">• Reviewing drawings or documents (for example, site plans, orders, or inventory reports)• Using handheld devices such as phones, radios, or barcode scanners• Wearing hearing protection that can interfere with hearing or communication
Environment	<ul style="list-style-type: none">• Do storage or unloading areas, work areas, or pedestrian walking paths obstruct sightlines or overlap with vehicle or mobile equipment pathways?• Do site conditions, lighting, or weather limit visibility?• Does noise interfere with the sound of warning devices when vehicles or mobile equipment travel through the worksite?
People	<ul style="list-style-type: none">• Do vehicles or mobile equipment travel in areas where they are not expected to be? (Workers may mistakenly believe these areas are safe or clear.)• Do lighting, obstructions, safety glasses, loads, barriers, and so on negatively affect workers' vision or visibility?• Is personal protective equipment (lowest on the hierarchy), such as high-visibility vests, reflective helmet stripes, or boots, the only control used to keep workers safe?

To complete this step, talk with workers involved in the work activities, the worker representative(s), and representatives from the joint health and safety

committee. Based on their expertise and experience, they may be able to offer valuable input on contributing factors and on ways to help prevent struck-by incidents.

Step 4: Determine and implement effective controls.

Where workers and vehicles or mobile equipment interact or are in close proximity, **you must eliminate or minimize the risk** (i.e., reduce it as much as reasonably possible). You can do this by determining and implementing effective controls. The hierarchy of controls, explained in the [information sheet](#), ranks control options from most effective to least effective. Always aim to implement controls from the elimination, substitution, or engineering categories.

Use the following questions to help you identify the most effective controls for each hazard:

- Can interactions between vehicles or mobile equipment and workers on foot be eliminated?

- Can vehicles or mobile equipment and workers on foot be separated physically or through timing to eliminate interactions?
- Can a combination of elimination, substitution, and engineering controls be used?
- Do your proposed controls match the level of risk?

In the [template](#), complete the table by determining the specific control(s) that will be put in place to eliminate or minimize the risk of struck-by incidents on your worksite. The most effective way to reduce the risk of struck-by incidents is to eliminate or limit interactions between vehicles or mobile equipment and workers on foot.

Location number	Task — Why are workers near vehicles or equipment?	Factors that contribute to the risk	Recommendations for effectively controlling the risk
1	Unloading building materials from a pallet to the work area	<ul style="list-style-type: none"> • Mobile equipment operated near workers in a congested work area. • Mobile equipment and workers share the same work areas and access and exit points. • Stacks of building materials create blind corners and limit visibility. 	<ol style="list-style-type: none"> 1. Separate worker pathways from mobile equipment travel areas. 2. Use a barrier to physically separate or barricade mobile equipment or vehicles from workers. 3. Clearly identify areas for workers and areas for mobile equipment. 4. Change arrival or delivery times or pathways to keep workers and equipment separate.

Figure 3: Sample task, factors contributing to the risk, and controls table (completed)

Monitoring workers' exposure to hazards

A *hazard* is anything that can cause harm, such as vehicles or mobile equipment. If the risk of workers interacting with or working near vehicles or mobile equipment cannot be eliminated, you must reduce the risk as much as possible. You should also have processes to monitor workers' exposure to moving vehicles and equipment. Administrative controls, such as safe work procedures and signage, are unreliable. The use of signage depends on workers noticing, acting, and correctly responding to a hazard. In a busy workplace, it's difficult for workers to stay continuously vigilant to all signs or hazards.

Monitor, review, and update for continuous improvement

Use the template as often as needed to identify areas of concern and review controls on your worksite for effective prevention of struck-by incidents. Managing your worksite's risks is an ongoing process. You'll need to monitor the effectiveness of the control measures in place and improve those that are not effectively reducing vehicle and worker interactions.

OHS Regulation requirements

- [Section 4.33, Arrangement of work areas](#)
- [Section 20.3, Coordination of multiple employer workplaces](#)
- [Section 20.4\(2\), Safe access](#)
- [Part 18, Traffic control](#)