BUS SAFETY VICTORIA

A branch of Transport Safety Victoria

Example risk register for managing safety at bus stops

The purpose of this document is to show how a risk register can be developed. It is intended to support our guidance material *'Managing Safety at bus stops: guidance for sharing responsibility'* and should be read in conjunction with that guidance.

VICTORIA State Government

Example risk register for managing safety at bus stops

A risk register is a record of information about identified risks and is the mechanism that BSV recommends for recording bus safety risks. The following is a step by step process to show one method for the development of a risk register and contains scenarios throughout showing each stage of the register's development.

The scenarios are examples only and do not represent all possible safety risks that may be applicable to individual bus services.

Important note

The following examples are indicative only and risk owners choosing to use the suggested templates should adapt them for their own specific operations. It is important to remember that the identified safety risks and associated items included here are for guidance only and are not intended to be inclusive. Risk owners should add additional risks as appropriate or remove those that are not relevant to their own business.

The following illustrates a step-by-step process which may be used to develop a risk register. The risk register may then be used to develop processes to manage risks associated with bus stops. It is important to note that communication/consultation and monitoring/review support the process at each step.

The steps are:

Step 1 establish the context

Step 2 identify risk source

Step 3 describe risks arising from the source

Step 4 identify risk causes

Step 5 identify risk consequences

Step 6 identify risk likelihood

Step 7 evaluate risks

Step 8 understand and decide on risk treatment

Step 9 assign risk treatment responsibility (if appropriate)

Step 10 show how safety risks have been eliminated or reduced so far as is reasonably practicable (SFAIRP).

Step 1. Establish the context

By establishing the context, risk owners document the risk environment. To establish the risk context, risk owners should:

- describe the nature of the activity to which the process applies
- define any relationships with other stakeholders
- describe any standards and guidelines adopted by the organisation
- document any inclusions of risks outside risk owner's legislative obligations, for example, occupational health and safety legislation, financial risks
- describe how changes affecting the bus industry are considered, including seasonal physical changes
- document the process to be followed when managing risk.

An easy way to record how the context has been established is to use a table like the one below.

Risk management context	
Activity description	There are (number) bus stops used in the area to provide bus services to (number) of schools in regional Victoria. Bus stops in regional areas may vary year by year, depending on the location of people who use the service
Stakeholders/risk holders	• client schools • local shires and councils • VicRoads regional offices • bus drivers • students • parents • BSV.
Standards and guidelines	• BSA • VicRoads guidelines for regional school bus stops • occupational health and safety legislation • TSV Guidance for managing risks to bus safety SFAIRP.
Inclusions outside the BSA	Occupational health and safety risks which have been incorporated into the risk register.
Consideration of change	Risk owners monitor relevant emergency services advice during times of extreme weather, for example, bush fires, and have documented agreed processes for changing transport arrangements if required.
Risk management process	Risk owners have adopted and amended TSV guidance material.

Step 2. Identify risk sources

Step 2 requires you to identify and document elements which have the potential to give rise to a risk, for example, the environment in which the activity is being conducted, and record them on the risk register.

Ideally, a risk should be identified in the following terms:

(Something happens) leading to (outcomes expressed in terms of impact on objectives)

For example: A spill of oil in the creek damages our reputation with the local community.

It is important to consider all things that could occur, not just the likely ones.

The obligation to ensure safety SFAIRP is not avoided because a risk source has not been identified. If it is considered reasonable for anyone to be aware of a risk source, then a person may not have demonstrated that they have ensured safety SFAIRP.

This step can be achieved by gathering as many people with appropriate knowledge as possible and discussing what could give rise to safety risks.

Risks may be sourced from one of more of the environments central to the activity.

The operating environment

Risks may include:
- road conditions
- weather conditions
- other road users
- location of bus stop infrastructure
- speed limits
- temporary or permanent changes to the way that activities are conducted (for example different routes, replacement buses, new bus stop placement).

The mechanical environment

Risks may include:
- maintenance processes
- bus manufacture
- bus equipment
- infrastructure manufacture and maintenance.

Driver fitness

Risks may include:
- driver medical condition and use of medications
- alcohol and drug considerations
- driver qualification
- fatigue.

Driver behaviour

Risks may include:
- distraction avoidance
- appropriate assertion
- obedience to applicable rules (for example road rules, company policies).

Emergency management

Risks may include abnormal operations/incidents.

The sample risk register, at the end of Step 2, looks like this.

Item	Risk source
1	Operating environment
2	Mechanical environment
3	Driver fitness
4	Driver behaviour
5	Emergency management

Step 3. Describe risks arising from the sources (events)

To describe what event may eventuate from a risk source, think about what could go wrong at each of the risk sources identified and record them on the risk register.

The following is a list of events arising from the sample risk sources. Note: a risk source may lead to more than one event.

The sample risk register now has a third column, headed Event, and looks like this.

Item	Risk source	Event
1	Operational environment	An adverse event occurs at a bus stop.
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.
3	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.
4	Driver behaviour	
5	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.
6	Driver behaviour	
7	Mechanical environment	A person is injured by bus stop infrastructure
8	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop.
9	Driver behaviour	A bus is struck by another vehicle as it departs from a bus stop.
10	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.

Step 4. Identify risk causes

As its name implies, a risk cause is something that causes a risk event to be realised.

There are many potential risk causes, including equipment faults, people making errors and environmental conditions.

There are also many ways to identify potential risk causes, including:
- reviewing internal/external accidents and incidents
- reviewing TSV documentation, including Bus Safety News and safety alerts
- analysing failures and investigations including failure of technical components as well as human errors/violations. For example:
  a) the inspection/maintenance schedule may also identify a component (treatment) which regularly fails
  b) a certain situation can make people prone to making mistakes or encourages them not to comply with rules and procedures
- analysing near miss situations
- analysing audits and inspection results.

Risk owners should identify and record on the risk register what will cause the risk event to happen.

The following is a sample list of risk causes that follow on from the example events and risk sources given above. Risk causes should be recorded on a risk register.

Item	Risk source	Event	Risk cause
1	Operational environment	An adverse event occurs at a bus stop.	Bus stop risk owners are not managing the risks to safety posed by bus stops.
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for bus drivers to see people at the bus stop or in its vicinity.
3			The bus stop is so located that it is difficult for bus drivers to see people at the bus stop or in its vicinity.
4			Modifications made to the bus stop make it difficult for bus drivers to see people at the bus stop or in its vicinity.
5			Maintenance carried out on the bus stop makes it difficult for bus drivers to see people at the bus stop or in its vicinity.
6	Operational environment	A person is struck by another vehicle before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.
7			The bus stop is so located that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.
8			Modifications made to the bus stop make it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.
9			Maintenance carried out on the bus stop makes it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.
10	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.
11			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.
12			Modifications made to the bus stop make it difficult for other road users to identify the presence of a bus stop.
13			Maintenance carried out on the bus stop makes it difficult for other road users to identify the presence of a bus stop.
14			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to stop at a bus stop.

Item	Risk source	Event	Risk cause
15	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.
16			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.
17			Modifications made to the bus stop make it difficult for road users to identify the presence of a bus stop.
18			Maintenance carried out on the bus stop makes it difficult for road users to identify the presence of a bus stop.
19			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to depart from a bus stop.
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.
21			Modifications made to the bus stop render it unsafe.
22			Maintenance carried out on the bus stop renders it unsafe.
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop.	Drivers do not give sufficient warning of buses stopping at bus stops.
24		A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses departing from bus stops.
25	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.	Other drivers do not see that a bus is arriving or departing a bus stop.

Step 5. Identify risk consequences

Consequences with respect to safety relate to the degree of harm to people (passengers, workers, members of the public) and may involve injuries or fatalities.

Identify and document on the risk register all potential outcomes, should they occur, of an event which has been seen as a risk.

Identify a consequence rating by using, for example, the sample consequence matrix shown.

Note: An event can lead to a range of consequences.

Rating	Description
1 - Insignificant	Minor injuries or ailments not requiring medical attention.
2 - Minor	Minor injuries requiring medical treatment but not requiring hospitalisation or a major injury requiring hospitalisation.
3 - Moderate	Multiple major injuries requiring hospitalisation.
4 - Major	A fatality.
5 - Extreme	Multiple fatalities.

Be careful not to underestimate the consequence as this may lead to ranking the risk lower than it actually is. If you are uncertain into which category a risk source falls, you should choose the most serious consequence.

It is also important that risk owners consider all potential outcomes, for example. a low speed collision may result in minor injuries, but there is still a potential for multiple fatalities and injuries in certain circumstances.

If risk owners rank a consequence with treatments in place, make sure that these treatments are actually in place and are working as expected. The reliability of the control should be tested/proven to ensure the ranking is not underestimated.

The following is a sample list of risk consequence (C) scores drawn from the sample events. Risk consequence scores should be recorded on a risk register.

Item	Risk source	Event	Risk causes	C
1	Operational environment	An adverse event occurs at a bus stop.	Bus stop risk owners are not managing the risks to safety posed by bus stops.	4
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4
3			The bus stop is so located that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4
4			Modifications made to the bus stop make it difficult for bus drivers to see people at the bus stop or in its vicinity.	4
5			Maintenance carried out on the bus stop makes it difficult for bus drivers to see people at the bus stop or in its vicinity.	4
6	Operational environment	A person is struck by another vehicle before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4
7			The bus stop is so located that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4
8			Modifications made to the bus stop make it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4
9			Maintenance carried out on the bus stop makes it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4
10	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3
11			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3
12			Modifications made to the bus stop make it difficult for other road users to identify the presence of a bus stop.	3
13			Maintenance carried out on the bus stop makes it difficult for other road users to identify the presence of a bus stop.	3
14			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to stop at a bus stop.	3

Item	Risk source	Event	Risk causes	C
15	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3
16			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3
17			Modifications made to the bus stop make it difficult for road users to identify the presence of a bus stop.	3
18			Maintenance carried out on the bus stop makes it difficult for road users to identify the presence of a bus stop.	3
19			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to depart from a bus stop.	3
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.	2
21			Modifications made to the bus stop render it unsafe.	2
22			Maintenance carried out on the bus stop renders it unsafe.	2
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop.	Drivers do not give sufficient warning of buses stopping at bus stops.	3
24		A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses departing from bus stops.	3
25	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.	Other drivers do not see that a bus is arriving or departing a bus stop.	3

Step 6. Identify risk likelihood

The likelihood of a risk is the chance or frequency that the event may occur.

Identify the chance that something may happen for each identified risk by using, for example, the sample likelihood ratings matrix below.

Rating	Description
1 - Rare	Theoretically possible but not expected to occur
2 - Unlikely	Have heard of something like this happening elsewhere
3 - Likely	The event has occurred several times
4 - Definitely	The event will occur

Do not underestimate the likelihood, as it may lead to ranking the risk lower than it actually is. If risk owners are not sure which category a hazard falls in take a more conservative approach.

Note: When determining likelihood:

use knowledgeable people

get advice and use technical experts if needed

use categories that make sense to you

be consistent with ratings.

The following is a sample list of risk consequence scores drawn from the sample events. Risk consequence scores should be recorded on a risk register. Likelihood ratings (L) should be recorded on a risk register.

Item	Risk source	Event	Risk causes	C	L
1	Operational environment	An adverse event occurs at a bus stop.	Bus stop risk owners are not managing the risks to safety posed by bus stops.	4	3
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1
3			The bus stop is so located that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	2
4			Modifications made to the bus stop make it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1
5			Maintenance carried out on the bus stop makes it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1
6	Operational environment	A person is struck by another vehicle before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1
7			The bus stop is so located that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	2
8			Modifications made to the bus stop make it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	2
9			Maintenance carried out on the bus stop makes it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	2

Item	Risk source	Event	Risk causes	C	L
10	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	1
11			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2
12			Modifications made to the bus stop make it difficult for other road users to identify the presence of a bus stop.	3	1
13			Maintenance carried out on the bus stop makes it difficult for other road users to identify the presence of a bus stop.	3	1
14			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to stop at a bus stop.	3	2
15	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	1
16			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2
17			Modifications made to the bus stop make it difficult for road users to identify the presence of a bus stop.	3	1
18			Maintenance carried out on the bus stop makes it difficult for road users to identify the presence of a bus stop.	3	1
19			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to depart from a bus stop.	3	2
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.	2	1
21			Modifications made to the bus stop render it unsafe.	2	2
22			Maintenance carried out on the bus stop renders it unsafe.	2	2
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop.	Drivers do not give sufficient warning of buses stopping at bus stops.	3	2
24		A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses departing from bus stops.	3	2
25	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.	Other drivers do not see that a bus is arriving or departing a bus stop.	3	3

Step 7. Evaluate risks

The purpose of risk evaluation is to assist in making decisions (based on outcomes of a risk analysis) about which risks need treatment and the priority for treatment implementation.

A risk evaluation is the translation of an assessment of likelihood and the consequence. This step allows risk owners to understand the risk score of an event and prioritise risk management activities.

Risk owners should determine a score for each risk by using a sample risk rating matrix. This is done by establishing where the likelihood row and the consequence column meet, for example, a risk with a consequence of 2 and a likelihood of 3 results in a risk score 6.

In our example, we have elected to allocate the following number ranges to group risks into priority categories.

A score of 1 – 3 = low risk.

A score of 4 – 6 = medium risk.

A score of 8 – 12 = high risk.

A score of 15 – 20 = extreme risk.

Risk owners should use a matrix that best suits their purposes and understanding to suit their own needs. Each risk should have an appropriate amount of effort expended on it to eliminate or reduce it SFAIRP. For example, a risk owner may decide on the following risk criteria position:

Extreme: immediately stop the activity that gives risk to the risk until it can be done safely.

High: the attention of a senior person in the business is needed and action plans and responsibility for completion of action should be specified.

Medium: can be managed by specific monitoring or response procedures, with responsibility specified.

Low: can be managed by routine procedures. Low risks are unlikely to need specific additional application of resources.

A basic risk evaluation matrix would have consequence as the top row with five columns underneath with their numeric value - insignificant (1), minor (2), moderate (3), major (4) and extreme (5). Likelihood consists of four stages listed in the left hand columns – rare, unlikely, likely and definitely. The consequence value is multiplied by the likelihood value and the resulting risk criterion is entered in the square where the row and column intersect to give a risk rating (R).

Colour coding the low priorities green, the medium yellow the high orange and the extreme red gives a quick visual representation of where the risk sits.

Risk evaluation matrix

		Consequence				
		Insignificant = 1	Minor = 2	Moderate = 3	Major = 4	Extreme = 5
Likelihood	Rare = 1	L	L	L	M	M
	Unlikely = 2	L	M	M	H	H
	Likely = 3	L	M	H	H	E
	Definitely = 4	M	H	H	E	E

Item	Risk source	Event	Risk causes	C	L	R
1	Operational environment	An adverse event occurs at a bus stop.	Bus stop risk owners are not managing the risks to safety posed by bus stops.	4	3	H
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M
3			The bus stop is so located that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	2	H
4			Modifications made to the bus stop make it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M
5			Maintenance carried out on the bus stop makes it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M

Item	Risk source	Event	Risk causes	C	L	R
6	Operational environment	A person is struck by another vehicle before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M
7			The bus stop is so located that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	2	H
8			Modifications made to the bus stop make it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M
9			Maintenance carried out on the bus stop makes it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M
10	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	1	L
11			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2	M
12			Modifications made to the bus stop make it difficult for other road users to identify the presence of a bus stop.	3	2	M
13			Maintenance carried out on the bus stop makes it difficult for other road users to identify the presence of a bus stop.	3	2	M
14			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to stop at a bus stop.	3	1	L
15	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	2	M
16			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2	M
17			Modifications made to the bus stop make it difficult for road users to identify the presence of a bus stop.	3	2	M
18			Maintenance carried out on the bus stop makes it difficult for road users to identify the presence of a bus stop.	3	1	L
19			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to depart from a bus stop.	3	2	M
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.	2	1	L
21			Modifications made to the bus stop render it unsafe.	2	2	M
22			Maintenance carried out on the bus stop renders it unsafe.	2	2	M
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop. A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses stopping at bus stops.	3	2	M
24			Drivers do not give sufficient warning of buses departing from bus stops.	3	2	M
25	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.	Other drivers do not see that a bus is arriving or departing a bus stop.	3	3	H
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.	2	1	L
21			Modifications made to the bus stop render it unsafe.	2	2	M
22			Maintenance carried out on the bus stop renders it unsafe.	2	2	M

Item	Risk source	Event	Risk causes	C	L	R
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop. A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses stopping at bus stops.	3	2	M
24			Drivers do not give sufficient warning of buses departing from bus stops.	3	2	M
25	Operational environment	A bus is struck by another vehicle as it approaches or departs from a bus stop.	Other drivers do not see that a bus is arriving or departing a bus stop.	3	3	H

Step 8. Understand and decide on risk treatment

Risk treatment strategies

There are several treatment strategies available to manage risks once they are identified and evaluated including:

- **accept** - in circumstances where a risk is insignificant and there are no reasonably practicable risk treatments available
- **mitigate**: there are two ways to mitigate risk:
  a) preventative action reduces the likelihood of an event occurring
  b) mitigative action reduces the consequence of an event that actually takes place and can also reduce exposure to an event
- **transfer** - move responsibility for management of the risk to another area or organisation either internally or externally, for example, insurance. Risks may be partially or, less often, completely transferred.

Risk treatment methods

Each risk treatment adopted will stem from one or a combination of the strategies described above.

A treatment is a process, device, practice or other action that changes a risk by eliminating or reducing it. Possible treatments include physical equipment, management processes and personnel actions. There are several treatment methods for reducing risk:

- **Eliminate the underlying risk source**. This is the most effective control measure and should be preferred over others if reasonably practicable. An example of elimination is changing a bus route to avoid a hazardous situation, for example, a passive level crossing or an unsealed road.
- **Substitute the risk source with a less hazardous one,** for example, substituting a dangerous substance for a safer one.
- **Isolate or separate the risk source**, for example, isolating or limiting bus operations in areas of high pedestrian traffic.
- **Use of engineering treatments**, for example, providing automatic sensors to detect obstructions in the door space.
- **Use of administrative/education treatments**, for example, providing driver training.
- **Use of personal protective equipment**, for example, providing specialist clothing.
- **Use of standards**, for example, applying the appropriate standard when deciding on the location of a bus stop.
- **Use of maintenance controls**, for example, maintaining buses appropriately and in accordance with company requirements and standards specified.

Good risk management involves ensuring a number of key factors are in place.

- **Competent people** – ensure that persons are aware of and understand what they are required to do. Things to consider include experience, knowledge, motivation and whether they need supervision.
- **Safe work practices** – ensure that activities such as procedures and work instructions are documented and correctly reflect the actions required. Again, ensure that the persons are aware and understand what they are required to do.
- **Equipment and materials that are fit for purpose** – provide the right tools and equipment so activities are performed safely. This also includes warning devices if the equipment has limitations.
- **A controlled work environment** – control the physical conditions of the work location, for example, noise, temperature, vibration, as well as management activities including work schedules and how things are communicated.

The number and integrity of treatments should reflect the level of risk. For example a high risk source should have a number of effective controls in place to manage the risk.

When considering controls those already in place for every cause and consequence identified should be documented.

It makes sense to stop a risk source becoming an event, so people should aim to identify and use 'preventative controls' first. Risk owners will also need to consider treatments if the event has occurred. These are called 'mitigative controls' which are needed to manage the consequences. Consider the effectiveness of treatments. Treatments should be:

- effective at reducing the risk
- reliable, for example, is it likely to be available on demand
- suitable to the climatic conditions or operating environment.

Note: TSV may, in an audit, ask for evidence to see that these treatments are in place, and they are effective. For example, reliability of treatments could be proven in maintenance records.

Identify any other alternative controls available.

Consider best practice, current standards and industry knowledge, including engineering equipment and latest managerial actions, to identify new treatments. Examples of additional measures include more frequent inspections, changing the staff roster to reduce fatigue.

Remember when any new equipment is to be constructed or included, the design and construction should always meet the current best practice code/standard if this is reasonably practicable in light of all the circumstances.

Note: If risk owners rank a consequence with treatments in place, make sure that these treatments are actually in place and are working as expected. The reliability of the treatment should be tested/proven to ensure the ranking is not underestimated.

Risk treatment checklist

The following questions should be considered and notes kept on the responses and solutions.

- Is the treatment effective at reducing the risk? If it is not effective, it could be argued that this is not a good control.
- Is the treatment reliable? For example, how likely it is to be available on demand,.
- Is the treatment suitable to the climatic conditions or operating environment? For example, the tyres fitted are not suitable for snow conditions.
- Is the treatment compatible with the existing systems or operating requirements? For example, a treatment may distract a driver from other duties, or it may interfere with the operation of the vehicle.
- Does the employee understand the procedure and can it be shown that they follow it correctly?
- What happens if this treatment fails? For example, if a component on the bus fails or an individual does not apply procedure properly.
- If the treatment relates to a referenced standard, for example, AS/NZS Standard or Code of Practice, has it been applied in the right way?
- Do any treatments rely on other systems? For example a component may not function if it does not have a power supply, and the component does not fail in a safe position (fail-safe).
- Is the treatment needed to prevent other causes of hazards? For example, if this treatment fails, could it lead to the realisation of another hazard?
- Are new hazards introduced if the new treatment is implemented? For example, introducing an automated system may affect the competency of the bus driver who may become less alert.
- Are there new standards/codes, systems or technologies that offer new ways to treat risks?
- Is the treatment a relevant good practice? For example:
  - is it established practice in Victoria, or another comparable jurisdiction in Australia or internationally, in terms of scale and operation of the Victorian system
  - does it demonstrably improve safety in its current application?

Note: What is good practice changes over time, for example, because of increased knowledge of hazards or changes in technology. Regularly review what is current good practice and exercise professional judgement to interpret this information. Identify and document the treatment measures in place or preventative measures risk owners may implement to reduce or mitigate the risk SFAIRP. Treatment measures should be recorded on a risk register. Multiple risk treatments may be applied for each risk.

Editorial note: In this continuing example of building a risk register the columns between 'Item" and Risk treatment method' have been removed due to space and layout limitations. The item numbers down the left hand side correspond to the item number for the previous steps. See the sample risk register at the rear of this document for a clearer depiction of the steps to this point.

Item	Risk treatment methods
1	Risk owners should manage any safety risks associated with bus stops under their control. This will be achieved by maintaining a register of all bus stops and applying a risk management process for all registered bus stops.
2	Ensure bus stops comply with appropriate design/construction criteria.
3	Ensure bus stops comply with appropriate design/construction criteria.
4	Modifications to bus stops are made in accordance with applicable standards or criteria.
5	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.
6	Ensure bus stops comply with appropriate design/construction criteria.
7	Ensure bus stops comply with appropriate design/construction criteria.
8	Modifications to bus stops are made in accordance with applicable standards or criteria.
9	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.
10	Ensure bus stops comply with appropriate design/construction criteria.
11	Ensure bus stops comply with appropriate design/construction criteria.
12	Modifications to bus stops are made in accordance with applicable standards or criteria.
13	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.
14	Ensure bus stops comply with appropriate design/construction criteria.
15	Ensure bus stops comply with appropriate design/construction criteria.

Item	Risk treatment methods
16	Ensure bus stops comply with appropriate design/construction criteria.
17	Modifications to bus stops are made in accordance with applicable standards or criteria.
18	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.
19	Ensure bus stops comply with appropriate design/construction criteria
20	Ensure bus stops comply with appropriate design/construction criteria
21	Modifications to bus stops are made in accordance with applicable standards or criteria.
22	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.
23	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.
24	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.
25	Buses are fitted with lights and signs that meet the requirements specified in clauses 115, 116 and 117 of Schedule 2 to the Road Safety (Vehicles) Regulations 2009.
	The maintenance regime ensures that buses are not used to provide a school bus service unless the complying lights and signs are serviceable and operating.

Step 9. Assign risk treatment responsibility (if appropriate)

Assigning the responsibility for risk treatment completion enables the risk register to accurately reflect the status and management accountability for risk management.

Document the status of risk treatment methods, the responsible person and either an expected completion date (if a new method) or a review date (for existing measures) on the risk register.

The effectiveness of risk treatment methods should be reviewed regularly to ensure they continue to be fit for purpose.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date
1	Risk owners should manage any safety risks associated with bus stops under their control. This will be achieved by maintaining a register of all bus stops and applying a risk management process for all registered bus stops.	Open	All risk owners.	Review annually or when new bus stops are added.
2	Ensure bus stops comply with appropriate design/construction criteria.	Open	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.
3	Ensure bus stops comply with appropriate design/construction criteria.	Open	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.
4	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register
5	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.
6	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.
7	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. A9d to bus stop register.
8	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register
9	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date
10	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.
11	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who determines bus stop location	Review on completion of bus stop construction. Add to bus stop register.
12	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.
13	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.
14	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.
15	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.
16	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who determines bus stop location	Review on completion of bus stop construction. Add to bus stop register.
17	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register
18	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.
19	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.
20	Ensure bus stops comply with appropriate design/construction criteria.	Ongoing	Person who designs and constructs roads.	Review on completion of bus stop construction. Add to bus stop register.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date
21	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.
22	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.
23	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator	Review training adequacy annually or in response to incident.
24	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator	Review training adequacy annually or in response to incident.
25	Buses are fitted with lights and signs that meet the requirements specified in clauses 115, 116 and 117 of Schedule 2 to the Road Safety (Vehicles) Regulations 2009.	Ongoing	Bus operator	Reviewed in accordance with MMS.
	The maintenance regime ensures that buses are not used to provide a school bus service unless the complying lights and signs are serviceable and operating.	Ongoing	Bus operator	Reviewed in accordance with MMS.

Step 10. Show how safety risks have been eliminated or reduced SFAIRP

Risk owners should summarise why they believe their risks have been eliminated or reduced SFAIRP. If a risk source is well understood because it is an established practice, there is nothing new or unusual and there are no major stakeholder implications, it can be demonstrated or argued that the risk is reduced SFAIRP.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
1	Risk owners should manage any safety risks associated with bus stops under their control. This will be achieved by maintaining a register of all bus stops and applying a risk management process for all registered bus stops.	Open	All risk owners.	Review annually or when new bus stops are added.	This risk has been reduced SFAIRP by ensuring the risks associated with all bus stops are appropriately managed. This involves the registration of all bus stops and a review of their safety on an ongoing basis.
2	Ensure bus stops comply with appropriate design/ construction criteria.	Open	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
3	Ensure bus stops comply with appropriate design/ construction criteria.	Open	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
4	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
5	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
6	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
7	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
8	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
9	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
10	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
11	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
12	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
13	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
14	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
15	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
16	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
17	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
18	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.

Item	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
19	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
20	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
21	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
22	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
23	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator.	Review training adequacy annually or in response to incident.	This risk has been reduced SFAIRP by ensuring drivers are appropriately trained and incident data is monitored for potential failures.
24	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator.	Review training adequacy annually or in response to incident.	This risk has been reduced SFAIRP by ensuring drivers are appropriately trained and incident data is monitored for potential failures.
25	Buses are fitted with lights and signs that meet the requirements specified in clauses 115, 116 and 117 of Schedule 2 to the Road Safety (Vehicles) Regulations 2009.	Ongoing	Bus operator.	Reviewed in accordance with MMS.	This risk has been reduced SFAIRP by applying an industry/regulatory code and ensuring the engineering treatments introduced by the code are available at all appropriate times. The adequacy of the regulatory standard is supported by incident date which shows no people have been struck by other vehicles when boarding or disembarking from my buses.
	The maintenance regime ensures that buses are not used to provide a school bus service unless the complying lights and signs are serviceable and operating.	Ongoing	Bus operator.	Reviewed in accordance with MMS.	This risk has been reduced SFAIRP by ensuring drivers are appropriately trained and incident data is monitored for potential failures.

The following tables have been reproduced below to assist readers to contain them in one consolidated place when developing a risk register, a sample of which is contained on the next pages.

Consequence ratings matrix

Rating	Description
1 - Insignificant	Minor injuries or ailments not requiring medical attention
2 - Minor	Minor injuries requiring medical treatment but not requiring hospitalisation or a major injury requiring hospitalisation
3 - Moderate	Multiple major injuries requiring hospitalisation
4 - Major	A fatality
5 - Extreme	Multiple fatalities

Likelihood ratings matrix

Rating	Description
1 - Rare	Theoretically possible but not expected to occur
2 - Unlikely	Have heard of something like this happening elsewhere
3 - Likely	The event has occurred several times or more in this company
4 - Definitely	The event will occur

Risk evaluation matrix

blank		Consequence				
		Insignificant = 1	Minor = 2	Moderate = 3	Major = 4	Extreme = 5
Likelihood	Rare = 1	L	L	L	M	M
blank	Unlikely = 2	L	M	M	H	H
	Likely = 3	L	M	H	H	E
	Definitely = 4	M	H	H	E	E

Sample risk register

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
blank	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 9	Step 9	Step 10
1	Operational environment	An adverse event occurs at a bus stop.	Bus stop risk owners are not managing the risks to safety posed by bus stops.	4	3	H	Risk owners should manage any safety risks associated with bus stops under their control. This will be achieved by maintaining a register of all bus stops and applying a risk management process for all registered bus stops.	Open	Risk manager.	Review annually or when new bus stops are added.	This risk has been reduced SFAIRP by ensuring the risks associated with all bus stops are appropriately managed. This involves the registration of all bus stops and a review of their safety on an ongoing basis.
2	Operational environment	A person is struck by a bus before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M	Ensure bus stops comply with appropriate design/ construction criteria.	Open	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
3			The bus stop is so located that it is difficult for bus drivers to see people at the bus stop or in its vicinity.	4	2	H	Ensure bus stops comply with appropriate design/ construction criteria.	Open	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
4			Modifications made to the bus stop make it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
5			Maintenance carried out on the bus stop makes it difficult for bus drivers to see people at the bus stop or in its vicinity.	4	1	M	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/ SFAIRP summary
blank	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 9	Step 9	Step 10
6	Operational environment	A person is struck by another vehicle before boarding or after disembarking a bus at a bus stop.	The bus stop is designed or constructed so that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
7			The bus stop is so located that it is difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	2	H	Ensure bus stops comply with appropriate design/ construction criteria	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
8			Modifications made to the bus stop make it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
9			Maintenance carried out on the bus stop makes it difficult for other vehicle drivers to see people at the bus stop or in its vicinity.	4	1	M	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
10	Operational environment	A bus is struck by another vehicle as it approaches a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	1	L	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 9	Step 9	Step 10
11			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2	M	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
12			Modifications made to the bus stop make it difficult for other road users to identify the presence of a bus stop.	3	1	M	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
13			Maintenance carried out on the bus stop makes it difficult for other road users to identify the presence of a bus stop.	3	1	M	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
14			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to stop at a bus stop.	3	2	L	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
15	Operational environment	A bus is struck by another vehicle as it departs from a bus stop.	The bus stop is designed or constructed so that it is difficult for other road users to identify the presence of a bus stop.	3	1	M	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs or constructs bus stops or engages someone to do so.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 9	Step 9	Step 10
16			The bus stop is so located that it is difficult for other road users to identify the presence of a bus stop.	3	2	M	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who determines bus stop location.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are located in accordance with appropriate standards.
17			Modifications made to the bus stop make it difficult for road users to identify the presence of a bus stop.	3	1	M	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
18			Maintenance carried out on the bus stop makes it difficult for road users to identify the presence of a bus stop.	3	1	L	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.
19			Road characteristics or infrastructure make it difficult for other vehicle drivers to identify that a bus is planning to depart from a bus stop.	3	2	M	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review against appropriate design criteria. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
20	Mechanical environment	A person is injured by bus stop infrastructure.	The design or construction of the bus stop is not safe.	2	1	L	Ensure bus stops comply with appropriate design/ construction criteria.	Ongoing	Person who designs and constructs roads.	Review on completion of bus stop construction. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are designed in accordance with appropriate standards.
21			Modifications made to the bus stop render it unsafe.	2	2	M	Modifications to bus stops are made in accordance with applicable standards or criteria.	Ongoing	Person who modifies bus stops or engages someone to do so.	Review on completion of bus stop modification. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are modified in accordance with appropriate standards.
22			Maintenance carried out on the bus stop renders it unsafe.	2	2	M	Maintenance to bus stops is completed in accordance with applicable standards or acceptable practice.	Ongoing	Person who maintains bus stops or engages someone to do so.	Review on completion of bus stop maintenance. Add to bus stop register.	This risk has been reduced SFAIRP by ensuring that bus stops are maintained in accordance with appropriate standards.

Item	Risk source	Event	Risk causes	C	L	R	Risk treatment methods	Current status	Risk owner	Completion or review date	Comments/SFAIRP summary
23	Driver behaviour	A bus is struck by another vehicle as it approaches a bus stop	Drivers do not give sufficient warning of buses stopping at bus stops.	3	2	M	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator.	Review training adequacy annually or in response to incident.	This risk has been reduced SFAIRP by ensuring drivers are appropriately trained and incident data is monitored for potential failures.
24		A bus is struck by another vehicle as it departs from a bus stop.	Drivers do not give sufficient warning of buses departing from bus stops.	3	2	M	Driver training ensures that drivers are aware of appropriate signalling when entering and departing bus stops.	Ongoing	Bus operator.	Review training adequacy annually or in response to incident.	This risk has been reduced SFAIRP by ensuring drivers are appropriately trained and incident data is monitored for potential failures.
25							The maintenance regime ensures that buses are not used to provide a school bus service unless the complying lights and signs are serviceable and operating.	Ongoing	Bus operator.	Reviewed in accordance with MMS.	This risk has been reduced SFAIRP by applying an industry/ regulatory code and ensuring the engineering treatments introduced by the code are available at all appropriate times. The adequacy of the regulatory standard is supported by incident date which shows no people have been struck by other vehicles when boarding or disembarking from company buses.

Monitoring and review of the risk register

Risk owners' work is not complete with the development of a risk register. There is ongoing work required to ensure risk remain effectively managed.

The risk manager should develop a process to ensure that all appropriate stakeholders conduct regular reviews of the risk register to ensure risks continue to be appropriately managed and any new or emerging risks are captured at the time of their identification.

Risk owners should regularly monitor safety risks at bus stops to ensure risk registers capture any new risks which may arise or the nature of existing risks change.

Duty holders should ensure any new or changed risks that they identify are communicated to risk holders and the risk manager.

Where to get more information:

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Melbourne Victoria, 3001

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