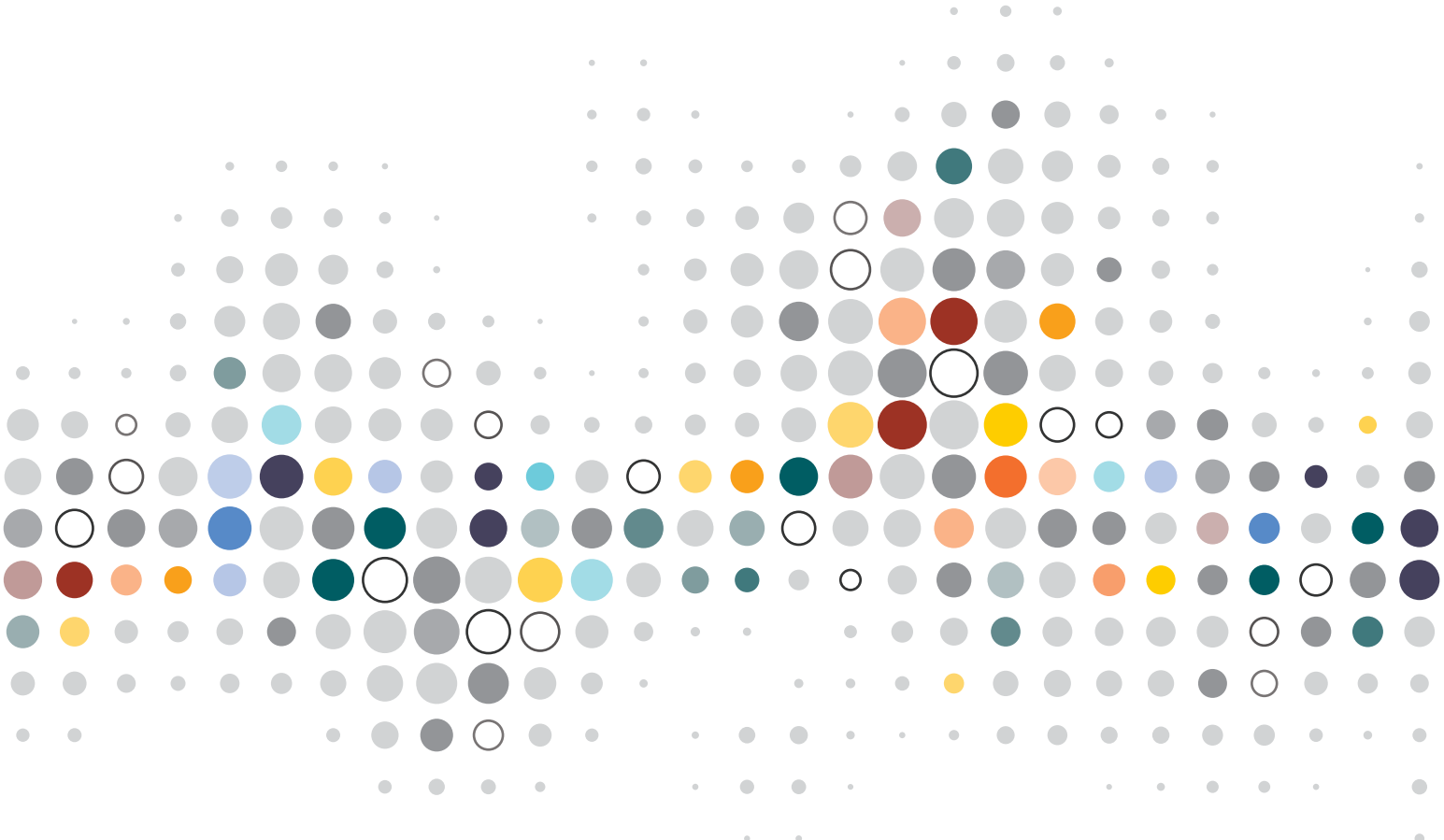
Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**

WorkSafe
Western Australia

STATE OF THE WORK ENVIRONMENT

Work-related traumatic injury fatalities in Western Australia

2010-11 to 2019-20p



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DEFINITIONS

AGENCY

In this report, "agency" refers to the breakdown agency. The agency classification has been developed to identify the chemicals, products, processes or pieces of equipment that were involved in a fatality.

i) **breakdown agency**: identifies the chemical, product, process or equipment that was most closely associated with the breakdown event

ii) **agency of fatality**: identifies the chemical, product, process or equipment that was the direct cause of the fatality.

BYSTANDER

Bystanders may include persons such as visitors, customers, service recipients, volunteers, or simply passers-by. Some bystanders may be employed in work entirely unrelated to the work-activity involved in the fatal incident, but many are not workers. While all bystanders in this report have been determined as work-related fatalities, the work activity is not related to their own employment. Bystanders are not classed under any occupation group.

FREQUENCY RATE

Frequency rates are used to provide an indication of the relative number of work-related fatalities across different years, scaled for changes in the number of hours worked. Frequency rates published in this document are per million hours worked. The fatality frequency rate is calculated as the annual fatality total divided by the number of hours worked, multiplied by one million. The number of hours worked is defined as the total number of hours worked by workers in Western Australia.

INCIDENCE RATE

Incidence rates are used to provide an indication of the relative number of work-related fatalities across different years, scaled for changes in the size of the workforce. Incidence rates published in this document are per million employees. The fatality incidence rate is calculated as the annual fatality total divided by the number of employees, multiplied by one million.

MECHANISM

The mechanism of incident classification is intended to identify the mechanism or process that best describes the circumstances in which the fatality occurred. Thus, the code is allocated on the basis of the overall circumstances of the incident, rather than on the specific direct cause of the fatality. The mechanism of incident is most easily thought of in terms of an action, exposure or event. Some types of mechanisms are actions, such as being struck by, or striking against, an object, or lifting, handling or carrying objects. Other mechanisms can be exposures, such as to a virus, environmental factors, mental stress or specific events such as motor vehicle incidents and cave-ins.

WORK-RELATED FATALITY

A traumatic injury fatality which has been determined by the Department to be work-related.

EXPLANATORY NOTES

Scope and exclusions

Fatalities are listed according to the year in which death occurred.

Unless otherwise specified, all data covers the period 2010–11 to 2019–20.

Annual fatality totals from 1988–1989 to 2019–20 are also referenced in some places.

The scope of this report includes all persons who sustained fatal traumatic injuries or poisoning as a result of work activity or exposures, and whose injuries occurred in an incident that took place in the State of Western Australia including Australian territories or territorial waters off the Western Australian coast.

'Work' is defined as activities undertaken for pay, profit, payment in kind or as a livelihood, including unpaid work in a family business, including on a farm or in fishing. This includes:

- employed and self-employed workers
- volunteers, where there is a connection with work; for example, the death of a volunteer under the direction of a paid employee is recorded because there is a connection with work, although the volunteer was not 'working' as defined above
- bystanders (those who died as a result of someone else's work activity).

This excludes:

- fatalities related to activities not classified as work, such as:
  - unpaid domestic or home duties
  - studying (unless in connection with employment, for example, an apprenticeship)
  - volunteer activities (unless there is a connection with work as described above)
- Commonwealth Government workers, workers covered by Comcare, and Australian Defence Force personnel
- work-related fatalities resulting from occupational diseases. Information on fatalities from work-related diseases is available through workers' compensation (WorkCover WA) and other sources
- road traffic accidents, unless there is a clear relationship between the accident and the work being performed at the time of the accident
- fatalities due to diseases and most disorders that would be seen as 'diseases', such as cancers, heart disease, heart attacks, or other natural causes, unless there is a clear relationship between the accident and the work being performed at the time of the accident
- self-inflicted injuries (suicide).

More information on the recording of work-related fatalities can be accessed through the Department's website.

Sources of information on work-related traumatic injury fatalities

Jurisdictions of work-related fatalities

This report includes work-related fatalities determined under the following acts and jurisdictions.

- *Occupational Safety and Health Act 1984* (OSH Act)
  - The Department's WorkSafe Directorate from 1 July 2017
  - Former Department of Commerce, WorkSafe Division prior to 30 June 2017
- *Mines Safety and Inspection Act 1994* (MSI Act)
  - The Department's, Mines Safety Directorate from 1 July 2017
  - Former Department of Mines and Petroleum prior to 30 June 2017
- *Transport Safety Investigation Act 2003*
  - Australian Transport Safety Bureau
- *Australian Maritime Safety Authority Act 1990*
  - Australian Maritime Safety Authority recorded from 2014-15 onward
- Other
  - Western Australia Police Force, the Department's Building and Energy etc.

Western Australian work-related fatalities dataset

The information provided in this report is based primarily on data collected from the investigation records of the Department's WorkSafe Directorate in relation to the OSH Act, and Mines Safety Directorate in relation to the MSI Act for work-related fatalities known and reported.

For completeness, information is also gathered from various other sources, including:

- the Department's Building and Energy Division (in relation to electrocutions)
- the Department's Dangerous Goods and Critical Risks Directorate (in relation to work-related fatalities in the petroleum and dangerous goods industries)
- the Australian Transport Safety Bureau and the Civil Aviation Safety Authority (mainly in relation to air incidents)
- the Australian Maritime Safety Authority (in relation to deaths at sea and on marine vessels), where possible.

Sources

Workforce data of total employed and total hours worked by industry, occupation and gender are sourced from the Australian Bureau of Statistics *Labour Force Survey* data which includes self-employed persons.

Western Australian population by age group or by industry figures are sourced from the Australian Bureau of Statistics *Census of Population and Housing*, 2016.

Western Australian population by gender figures are sourced from the Australian Bureau of Statistics *Australian Demographic Statistics*, June 2019.

Data currency

Information provided in this report is correct as at 26 February 2021.

Investigations by the Department and the release of information from coronial findings and other agencies can be lengthy; information is subject to revision as further details become available.

For example, the status of an incident may be classified as work-related from preliminary information, however following more detailed investigation, the incident may later be changed to not work-related.

Revisions can also occur in respect to any data item collected, including industry classification, employment type and jurisdiction.

Data for 2018–19 and 2019–20 is considered preliminary (suffixed with 'p'), as some investigations related to these years are ongoing.

Since publication of *State of the Work Environment* (SOWE) Edition 55 in July 2020, there have been two revisions to the number of work-related fatalities.

The total count of work-related fatalities in the 2017–18 year has decreased from 14 to 13. One fatality previously classified as work-related was reviewed and reclassified as "undetermined" after additional information was received from the coroner.

The total count of work-related fatalities in the 2018–19 year has increased from 12 to 13.

Classifications systems

Traumatic incident characteristics

Incident classifications are assigned according to the *Type of Occurrence Classification System Third Edition Revision 1* (TOOCS 3.1) provided by Safe Work Australia.

Occupation of worker

Occupation classifications are assigned according to the *Australian and New Zealand Standard Classification of Occupations First Edition* (ANZSCO) provided by the Australian Bureau of Statistics.

Industry of workplace

Industry classifications are assigned according to the *Australian and New Zealand Standard Industry Classification 2006 Edition* (ANZSIC) provided by the Australian Bureau of Statistics.

The data collected is classified according to the ANZSIC data item – Industry of workplace which describes the main work activity of the establishment at which the person was fatally wounded.

This classification is consistent across the data collections in all states and territories for data related to both work-related fatalities and work-related lost time injuries and diseases.

Caution should be exercised when comparing this publication to publications with data from other sources which may not use the same basis for classification by industry.

Comparisons with other data sets

The information in this report may differ from that reported by other agencies and organisations.

Comparisons with lost time injury and disease data

The data used to produce this report differs from reports on lost time injuries and diseases. The definition and identification of work-related fatalities requires case-by-case assessment of the work being performed and the circumstances of the fatal event.

Comparisons with WorkCover WA compensated work-related fatality data

WorkCover WA data on the annual number of compensated work-related fatalities does not match the data in this report due to differences in the data collection methods.

WorkCover compensated work-related fatalities include certain types of fatalities that are not directly related to work, but occur while a person is at work, such as fatalities resulting from road traffic accidents and fatalities from heart attack and other diseases.

WorkCover WA reports compensated fatalities according to the year in which the relevant claim is lodged, regardless of when the associated fatality occurred.

Comparisons with Safe Work Australia fatality data

Data on Western Australian work-related fatalities is also collected and reported on by Safe Work Australia.

Safe Work Australia reports based on calendar years and uses different criteria for inclusion in the dataset. In particular, Safe Work Australia generally considers on-duty motor vehicle collisions to be work-related.

Further information

The Department provides a range of statistics on workplace lost time injuries and diseases, including information on work-related fatalities. This information is available from the Department's website.

SOWE report series

Previously, reports in the SOWE series published by the former Department of Commerce, WorkSafe Division provided data on work-related fatalities from 1988–1989, a date which coincided with the effective operation of the OSH Act. The OSH Act accorded WorkSafe legislative responsibility for all work-related fatalities, excluding those under the responsibility of the:

- *Energy Safety Act 2006*
- *Electricity Act 1945*
- *Gas Standards Act 1972*
- *Mines Safety and Inspection Act 1994*
- *Petroleum (Submerged Lands) Act 1982*
- *Petroleum and Geothermal Energy Resources Act 1967*
- *Petroleum Pipelines Act 1969*.

STATISTICAL SUMMARY

There were **16 work-related fatalities** in 2019-20p. The **work-related fatality rate** was **11.1** fatalities per 1,000,000 workers

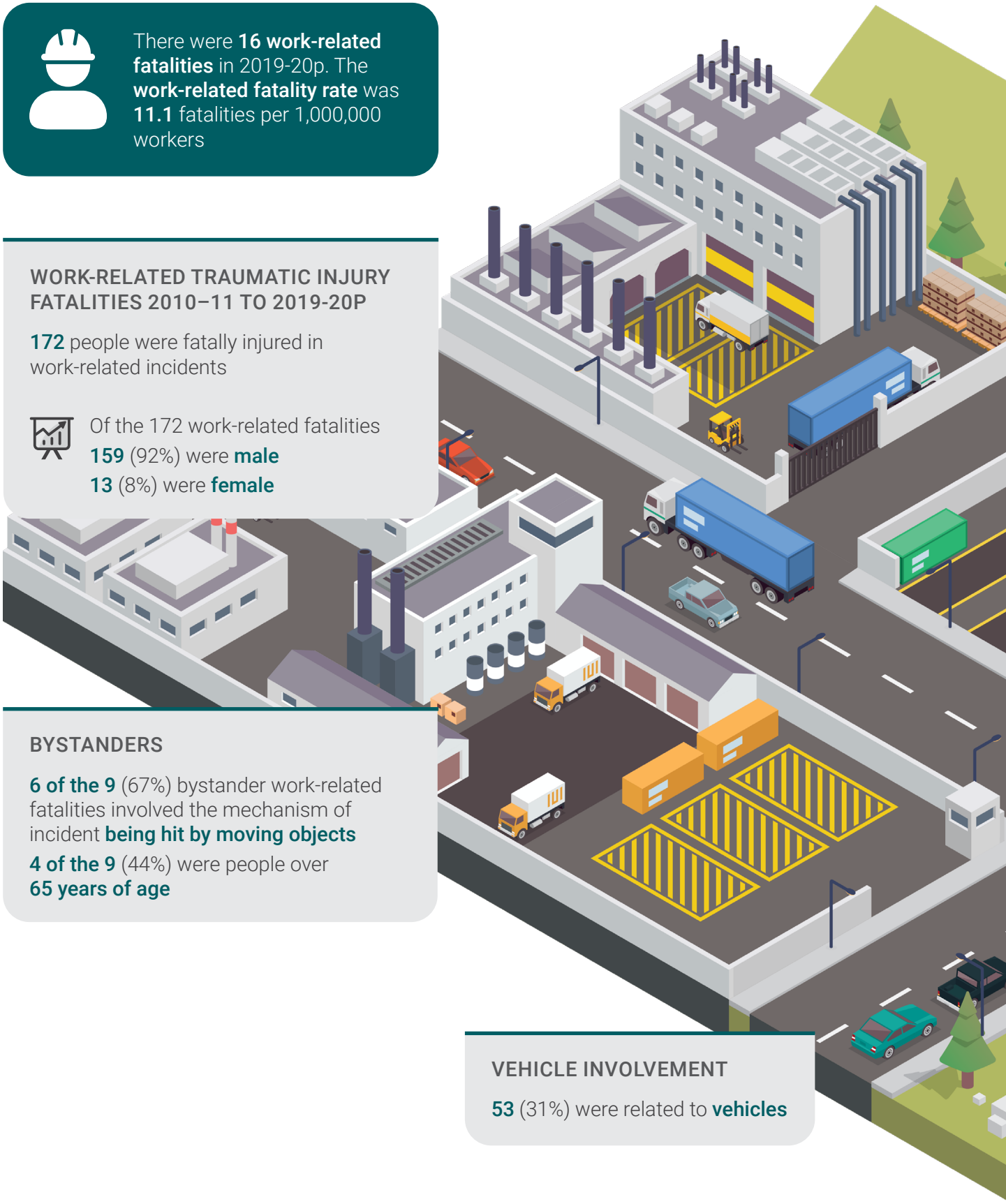
WORK-RELATED TRAUMATIC INJURY FATALITIES 2010–11 TO 2019-20P

172 people were fatally injured in work-related incidents

Of the 172 work-related fatalities
159 (92%) were **male**
13 (8%) were **female**

BYSTANDERS

6 of the 9 (67%) bystander work-related fatalities involved the mechanism of incident **being hit by moving objects**
4 of the 9 (44%) were people over **65 years of age**



VEHICLE INVOLVEMENT

53 (31%) were related to **vehicles**

OCCUPATION

72% of work-related fatalities were in three major occupation groups

Labourers was the highest at **45** (26%)

Machinery Operators and Drivers had the 2nd highest at **44** (26%)

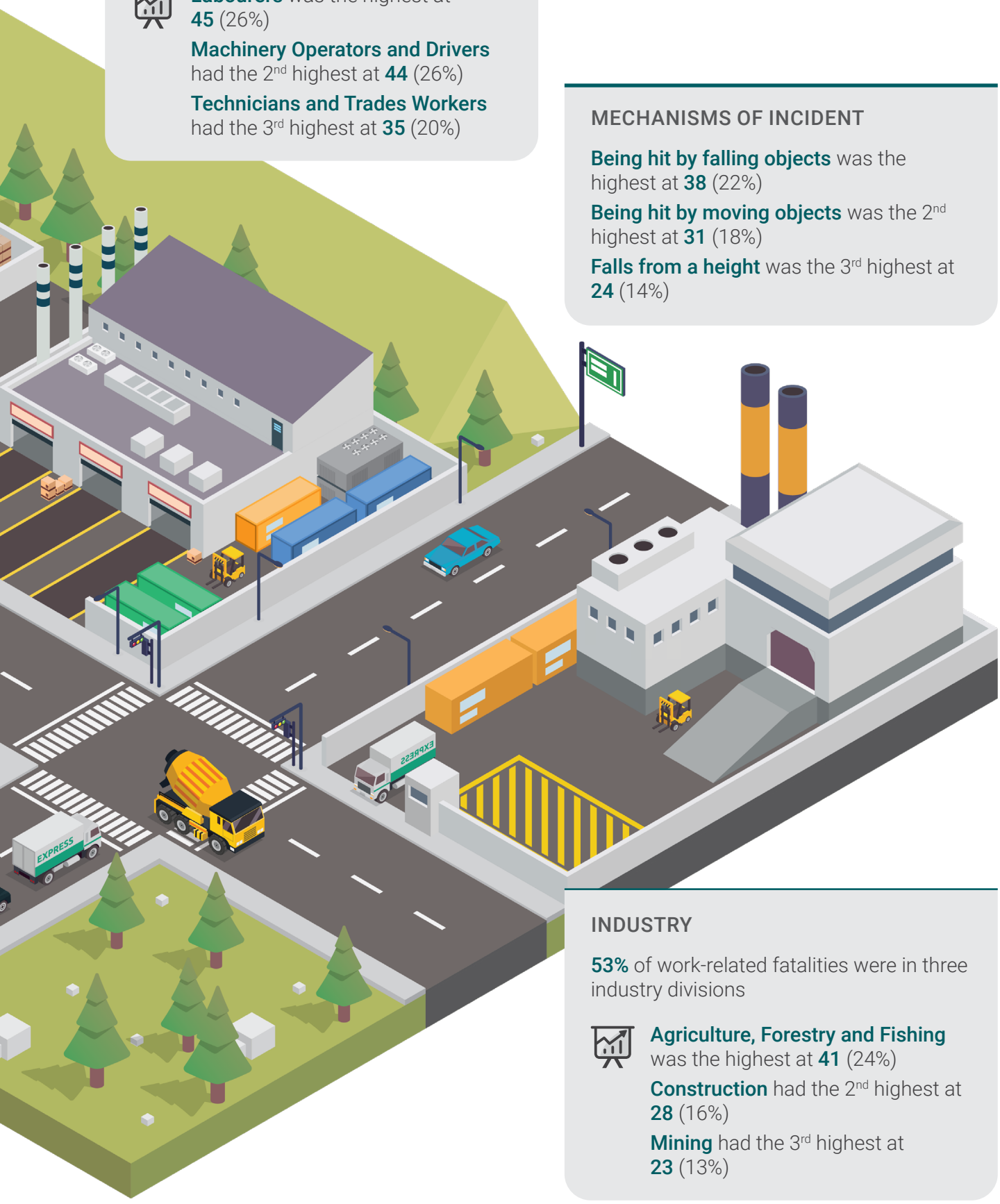
Technicians and Trades Workers had the 3rd highest at **35** (20%)

MECHANISMS OF INCIDENT

Being hit by falling objects was the highest at **38** (22%)

Being hit by moving objects was the 2nd highest at **31** (18%)

Falls from a height was the 3rd highest at **24** (14%)



INDUSTRY

53% of work-related fatalities were in three industry divisions

Agriculture, Forestry and Fishing was the highest at **41** (24%)

Construction had the 2nd highest at **28** (16%)

Mining had the 3rd highest at **23** (13%)

EXECUTIVE SUMMARY

The *State of the Work Environment* (SOWE) series is produced by the Department of Mines, Industry Regulation and Safety (the Department), Safety Regulation Group to promote awareness of occupational safety and health in Western Australia.

This report analyses data on traumatic injury fatalities in Western Australia which have been determined by the Department to be work-related (work-related fatalities). Both workers and bystanders are considered for the analysis in this report. Where this report refers to workers rather than people, bystanders have been excluded from the analysis. Details about the scope of this report are provided in Explanatory notes.

Data for 2018–19 and 2019–20 is considered preliminary (suffixed with 'p'), as some investigations related to this period are ongoing.

Work-related traumatic injury fatalities 2019–20p

During the year 2019–20p, there were 16 work-related fatalities in Western Australia (preliminary data, current at February 2021). Currently, on average, a person is fatally injured in a work-related incident every 21 days.

The average number of work-related fatalities has reduced since the introduction of the OSH Act in 1988–89:

- 1990s – 23 work-related fatalities per year
- 2000s – 20 work-related fatalities per year
- 2010s – 17 work-related fatalities per year.

Summary of work-related traumatic injury fatalities in Western Australia 2019–20

- A self-employed mechanic was installing an air-conditioner in a residence when he was electrocuted while reconnecting ducting.
- An abattoir worker holding a knife sustained a fatal injury after being hit by a falling animal carcass.
- A self-employed farmer sustained fatal injuries during a quad bike crash.
- A truck driver sustained a back injury in a vehicle crash. After surgery the driver suffered a fatal occurrence of deep vein thrombosis.
- A truck driver was working on a truck engine with the cabin raised to provide access. The cabin fell onto the driver causing fatal injuries.
- A teaching assistant developed a fatal bacterial infection after being injured while carrying out her duties.
- A truck driver received fatal head injuries while operating a trailer covering system.
- A contract fixed plant operator received fatal injuries when he was crushed between a fence line and the telehandler he was operating.
- A worker on a roof under construction fell seven metres when the wind lifted a roof sheet.
- A farmhand was involved in a fatal vehicle rollover that occurred on a farming property.
- An elderly bystander was assisting to round up cattle on a farm when they were fatally run over by a ute.
- A truck operator was cleaning the wheels of a trailer when they fell two metres and sustained fatal injuries.
- A traffic controller was fatally injured when they were struck by a vehicle while working on a roadworks construction.
- A piece of steel fell from the tines of a forklift and fatally struck a trade assistant.
- A train driver sustained fatal injuries after their freight train collided with a stationary freight train.

Analysis of work-related traumatic injury fatalities – past 10 years

During 2010–11 to 2019–20p, 172 people were fatally injured in work-related traumatic incidents in Western Australia.

Comparisons with other jurisdictions are difficult, but a standardised dataset of fatality incidence rates available from Safe Work Australia places Western Australia as the fifth of eight jurisdictions, with an incidence rate 20 per cent above the national rate.

Demographic factors

Workers aged 65 and over make up just four per cent of the workforce, but account for 15 per cent of work-related fatalities among workers.

Older workers were disproportionately likely to be fatally hit by moving objects, especially those 65 and older, who made up 32 per cent of workers fatally hit by moving objects.

Males represent 63 per cent of the workforce by hours worked, but comprise 92 per cent of work-related fatalities.

Mechanisms of incidents

The dominant mechanism of incident was *Being hit by moving objects*, accounting for 53 per cent of work-related fatalities.

Major contributing subgroups were *Being hit by falling objects* (38 work related fatalities) and *Being hit by moving objects* (31 work-related fatalities). This mechanism excludes *Vehicle incidents and other*, which accounts for a further 18 per cent of work-related fatalities.

Two-thirds of bystanders fatally injured in work-related incidents were hit by moving objects.

Occupations

Labourers and *Machinery Operators and Drivers* made up a disproportionate share of work-related fatalities.

The occupation unit group of Truck Drivers accounted for 22 work-related fatalities.

Truck drivers make up two per cent of the Western Australia workforce by hours worked, but 13 per cent of work-related fatalities.

Industries

By frequency rate, most work-related fatalities occurred in *Agriculture, Forestry and Fishing* followed by *Arts and Recreation Services* and *Transport, Postal and Warehousing*.

By numbers, the top three industries for work-related fatalities were:

- 41 – Agriculture, Forestry and Fishing
- 28 – Construction
- 23 – Mining.

Agriculture, Forestry and Fishing has both the highest number of work-related fatalities and the highest frequency rate. This is despite a relatively small workforce compared to many other industries.

Fatalities in the *Construction* industry have been concentrated in small sectors of the industry such as the *Building Construction* subdivision and the *Non-residential Building Construction* industry group.

Affected Workers and Families Advisory Committee

When people are fatally injured in work-related traumatic incidents, this has a significant impact on their families, friends and other workers. During 2019–20, the first steps were taken to create a support group for the friends and relatives of people who have lost their lives at work. The Affected Workers and Families Advisory Committee was formally established in 2021.

New legislation

During the period 2010–11 to 2019–20p, the Work Health and Safety Bill was passed through Parliament as the *Work Health and Safety Act 2020* and was assented to by the Governor on 10 November 2020.

The development of supporting regulations and codes of practice is now underway. These reforms will modernise Western Australia's legislation and harmonise it with the other states and territories, excluding Victoria, allowing appropriate safe work systems to be aligned.

1 OVERVIEW OF WORK-RELATED TRAUMATIC INJURY FATALITIES (1988-89 TO 2019-20P)

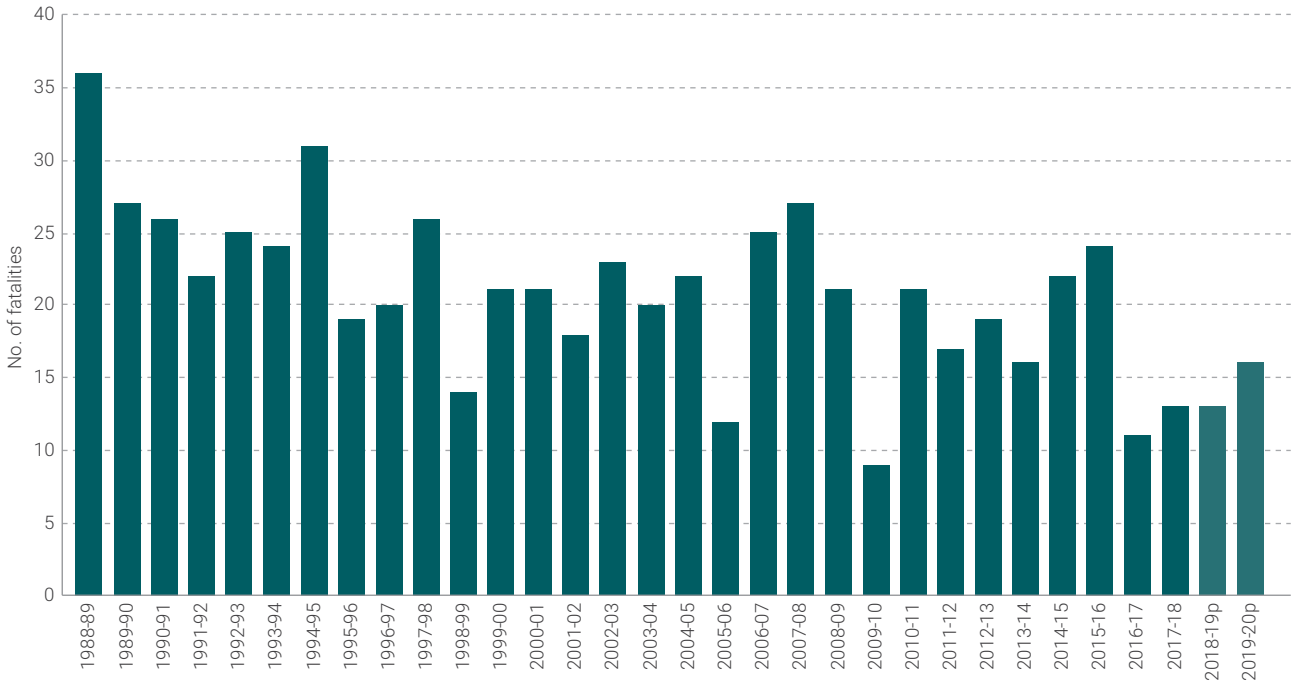


FIGURE 1 WORK-RELATED TRAUMATIC INJURY FATALITIES FROM 1988-89 TO 2019-20P

Key findings

Figure 1 shows an apparent downward trend in the number of people fatally injured in work-related incidents per year, during the period 1988-89 to 2019-20p.

While the workforce has almost doubled since 1988–89, the total numbers of work-related fatalities are significantly lower than in the late 1980s and early 1990s.

In the late 1980s and 1990s, Western Australia recorded more than 20 work-related fatalities each year, with two outlier years recording more than 30 work-related fatalities.

The average number of people fatally injured in work-related incidents per year for the 1990s was 23 and for the 2000s was 20.

In the 2010s, only three years recorded more than 20 work-related fatalities. The average number of people fatally injured in work-related incidents for this decade was 17.

A total of 172 people were fatally injured in work-related incidents during the ten-year reporting period of 2010–11 to 2019–20.

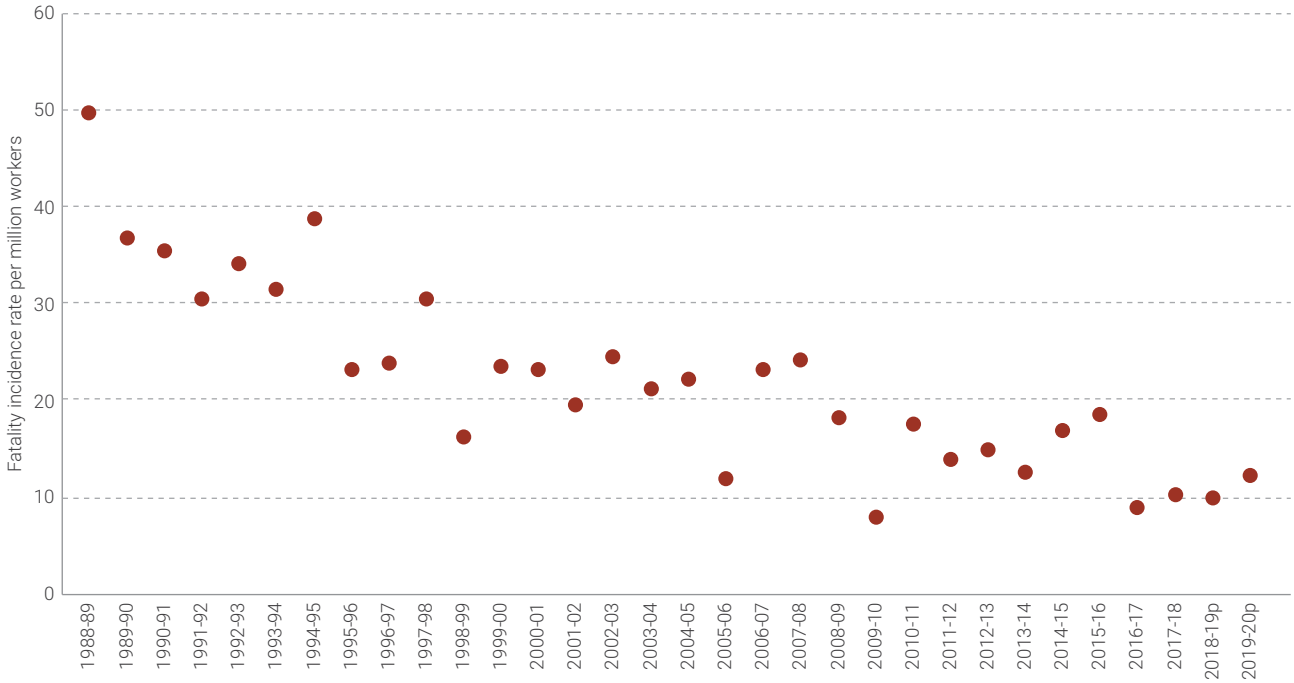


FIGURE 2 WORK-RELATED TRAUMATIC INJURY FATALITY INCIDENCE RATES FROM 1988–89 TO 2019–20P

Key findings

A downward trend in the fatality incidence rates is more apparent than in the numbers of work-related fatalities. The 2019–20 incidence rate for Western Australia was 11.

Note: Incidence rates are used to provide an indication of the relative number of work-related fatalities across different years, scaled for changes in the size of the workforce.

The fatality incidence rate is calculated as the annual fatality total divided by the number of employees, multiplied by one million. Fatality incidence rates are shown as dots in Figure 2.

2 WORK-RELATED TRAUMATIC INJURY FATALITY INCIDENCE RATES ACROSS AUSTRALIA

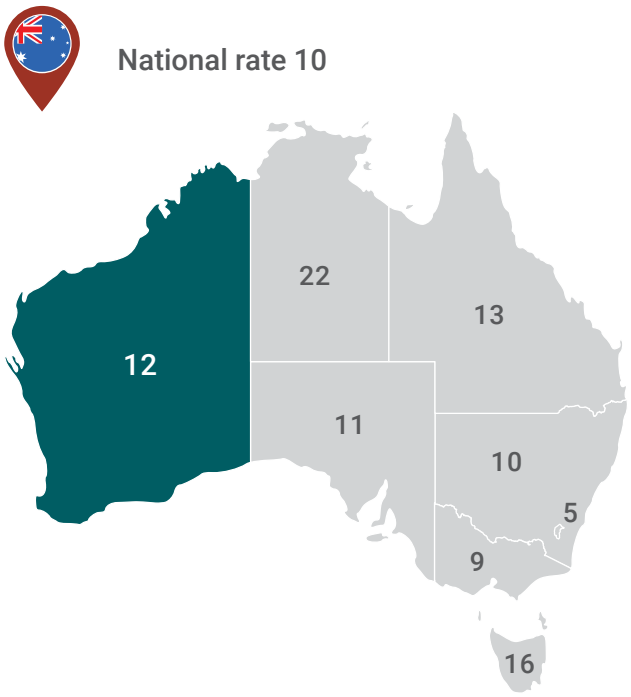


FIGURE 3 WORK-RELATED TRAUMATIC INJURY FATALITY INCIDENCE RATES BY STATE OR TERRITORY (2014-15 TO 2018-19)

Key findings

Western Australia's work-related fatality incidence rate is slightly above the national rate.

Western Australia has the fifth highest incidence rate of the eight jurisdictions.

Note: Figure 3 shows comparative work-related fatality incidence rates across Australia[1]. These incidence rates are not directly comparable with those in Figure 2.

The data in Figure 3 has been prepared by Safe Work Australia to present a reasonably comparable picture across jurisdictions and may differ from incidence rates reported by each jurisdiction, as different criteria is used when determining whether fatalities are work-related.

One of the greatest differences in the criteria used by various jurisdictions is in their treatment of on-duty motor vehicle accidents, which occur in significant numbers.

Western Australia uses a different treatment than most other jurisdictions for on-duty motor vehicle accidents, whereby they are not determined to be work-related unless there is a clear connection to work.

Incidents on public roads have been excluded from Figure 3 to present more comparable figures between jurisdictions.

[1] Safe Work Australia, *Comparative Performance Monitoring report* 22nd edition – Part 1, 2021, p. 17. Figures in this report have been presented as rate per 1,000,000 workers rather than rate per 100,000 workers for consistency within this report. Years presented are the latest figures available.

3 WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

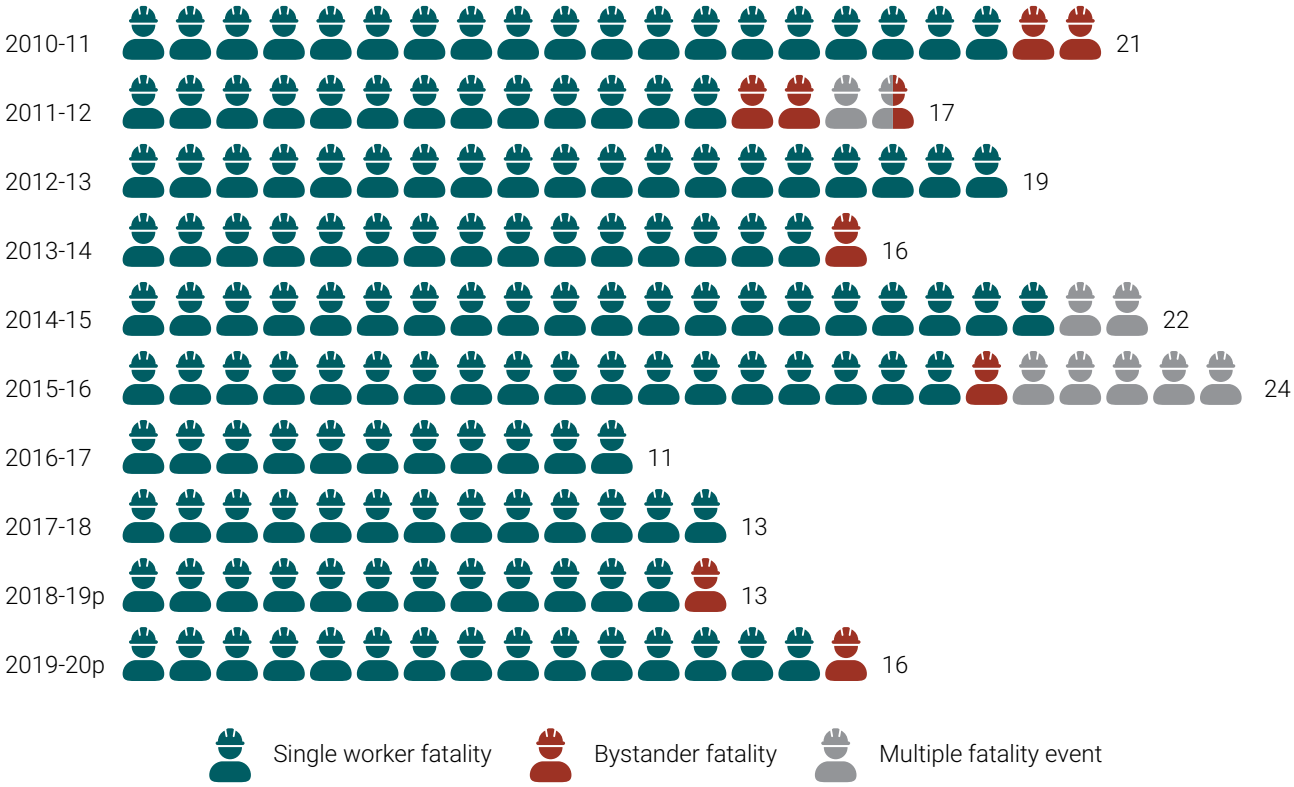


FIGURE 4 TYPES OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Key findings

Annual fatality totals can be influenced by multiple fatality events, due to a single incident resulting in more than one death.

The period 2010–11 to 2019–20p included four multiple fatality events (Figure 4):

- **2011–12**: A prime mover towing two trailers left the road and passed through a crash barrier before falling five metres, incurring extensive damage. A worker and passenger were fatally injured.
- **2014–15**: Several workers were in the proximity of a high voltage switch when an arc or flash ignited the conductive oil in the switch housing. Two workers were killed and a further two suffered extensive burns.
- **2015–16**: There were two multiple fatality events:
  - a fishing vessel sank; one person was found deceased, with two more persons missing, presumed dead
  - three concrete panels became unstable and fell from a delivery truck, hitting and fatally injuring two workers.

4 AGE FOCUS

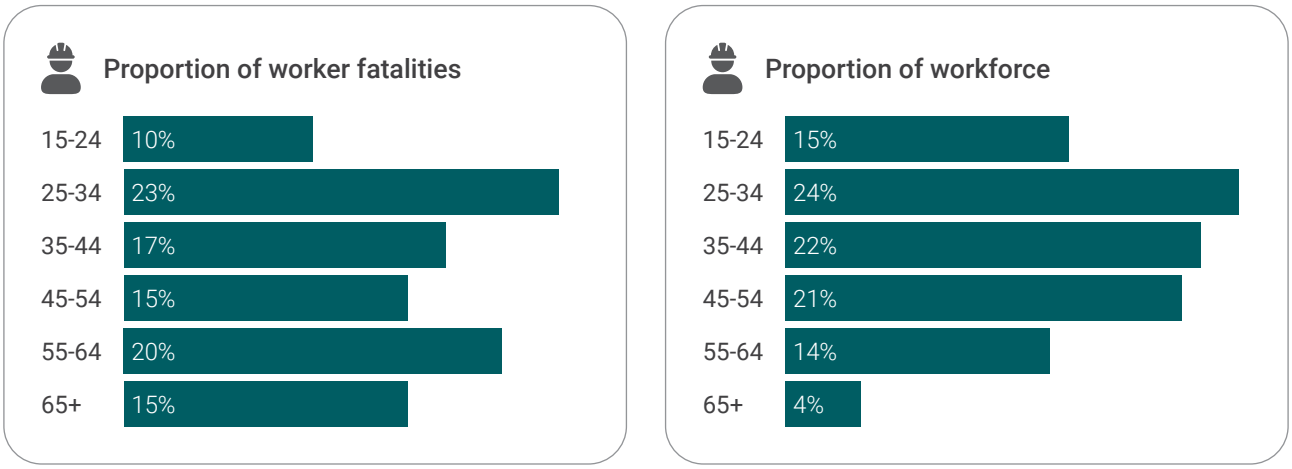


FIGURE 5 AGE GROUPS, AS A PROPORTION OF WORK-RELATED TRAUMATIC INJURY FATALITIES AND WORKFORCE (2010–11 TO 2019–20P)

Key findings

Figure 5 shows that work-related fatalities among workers are not proportionately distributed across age groups.

Workers under 55 have a lower share of work-related fatalities than would be expected from their numbers in the workforce. Workers 55 and above have a higher share of work-related fatalities than would be expected from their numbers in the workforce.

In particular, workers aged 65 and over make up just four per cent of the workforce, but 15 per cent of work-related fatalities among workers.

Note: The age groups in Figure 5 were selected to provide roughly equal population sizes.

Work-related fatalities exclude fatalities that occur at a workplace but are deemed to involve natural causes, such as heart attacks.

Bystanders were excluded from the fatality count for Figure 5, as they do not form part of the workforce.

TABLE 1 AGE GROUPS OF WORK-RELATED TRAUMATIC INJURY BYSTANDER FATALITIES (2010–11 TO 2019–20P)

Age range	Number of bystander fatalities
0 – 14 years of age	1
15 – 24 years of age	2
45 – 54 years of age	2
65 years of age and over	4

Key findings

The nine bystander work-related fatalities in Table 1 were distributed across multiple age groups, but people aged 65 and over were over-represented.

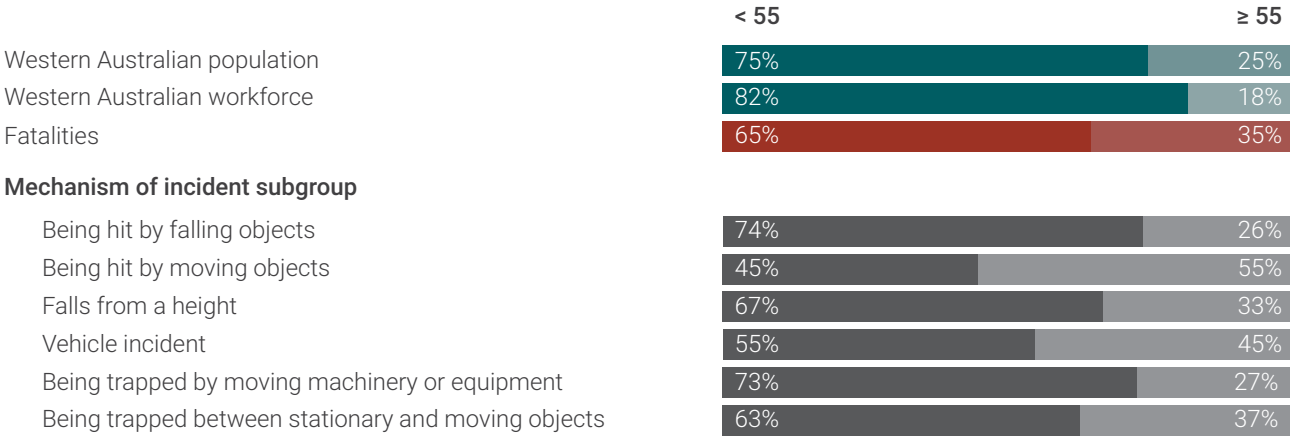


FIGURE 6 PROPORTION OF POPULATION AND PROPORTION OF WORK-RELATED TRAUMATIC INJURY FATALITIES, BY MECHANISM SUBGROUP, FOR PERSONS UNDER 55 AND PERSONS AGED 55 AND OVER (2010–11 TO 2019–20P)

Key findings

Persons aged 55 and over are over-represented in incidents involving *Being hit by moving objects* (see Section 6.2 for further information).

They are also over-represented in incidents involving *Falls from a height*; *Vehicle incident*; and *Being trapped between stationary and moving objects*.

Note: Figure 6 considers persons aged under 55 and persons aged 55 and above, and compares the share of the population of these groups to the share of work-related fatal incidents involving various mechanisms of incident.

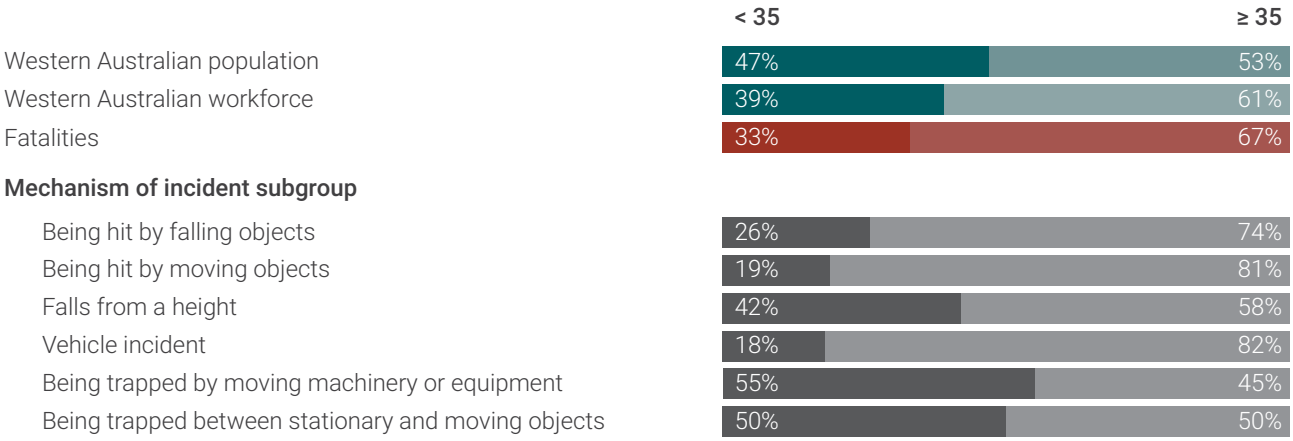


FIGURE 7 PROPORTION OF POPULATION AND PROPORTION OF WORK-RELATED TRAUMATIC INJURY FATALITIES BY MECHANISM SUBGROUP FOR PERSONS UNDER 35 AND PERSONS AGED 35 AND OVER (2010–11 TO 2019–20P)

Key findings

Persons aged under 35 are under-represented in incidents involving *Being hit by moving objects*.

They are also under-represented in incidents involving *Being hit by falling objects* and *Vehicle incident*.

Note: Figure 7 considers persons aged 34 and below and persons aged 35 and above, and compares the share of population of these groups to the share of the population of these groups to the share of work-related fatal incidents involving various mechanisms of incident.

5 GENDER FOCUS

FIGURE 8 PROPORTION OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

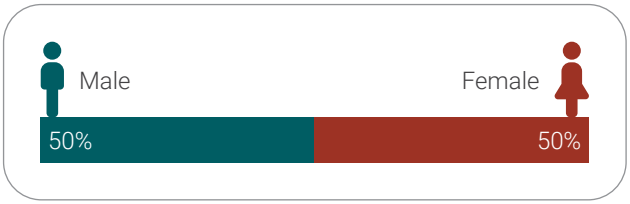


FIGURE 9 PROPORTION OF WORKING AGE POPULATION (2010–11 TO 2019–20)

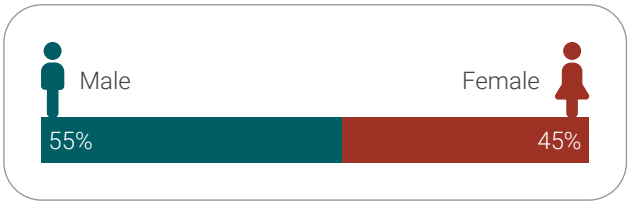


FIGURE 10 PROPORTION OF EMPLOYEES (2010–11 TO 2019–20)

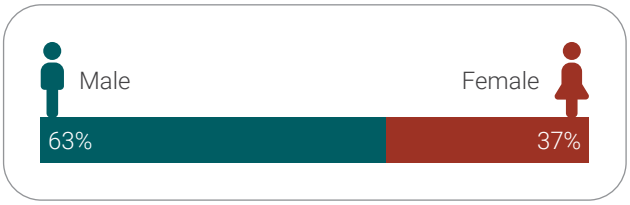


FIGURE 11 PROPORTION OF HOURS WORKED (2010–11 TO 2019–20)

Key findings

Males make up 92 per cent of work-related fatalities for the period 2010–11 to 2019–20p, though they make up 50 per cent of the working age population.

The gender disparity in work-related fatalities may be influenced by several factors; however, some of the higher fatality numbers may be explained by a greater male participation in the workforce, particularly when hours worked are considered.

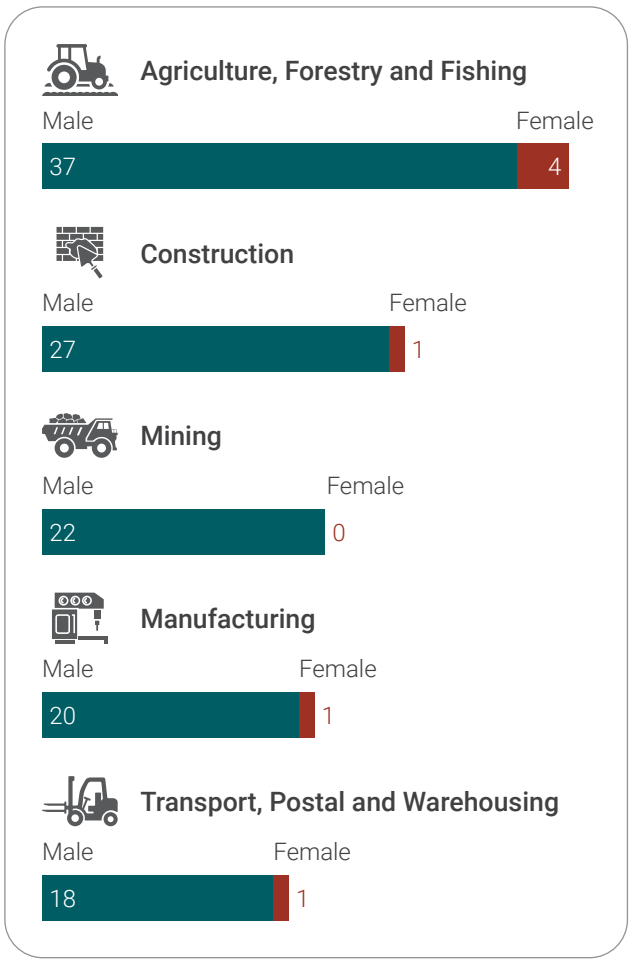


FIGURE 12 WORK-RELATED TRAUMATIC INJURY FATALITIES BY TOP FIVE INDUSTRIES AND GENDER (2010-11 TO 2019-20P)

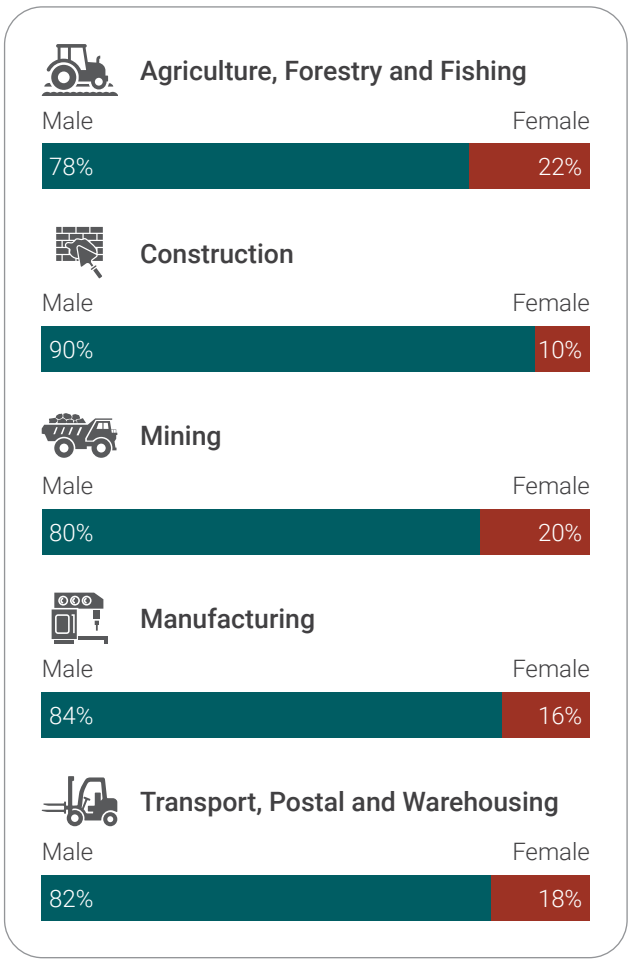


FIGURE 13 PROPORTION OF WORKFORCE BY INDUSTRY AND GENDER (2010-11 TO 2019-20)

Key findings

While many industry divisions with higher fatality numbers have a significant over-representation of men in their workforce, in the five industries with the most traumatic injury work-related fatalities, men have had more work-related fatalities than their proportion in the workforce explains (Figure 12).

For example, 100 per cent of the work-related fatalities in *Mining* were male, yet males represent 80 per cent of the *Mining* workforce.

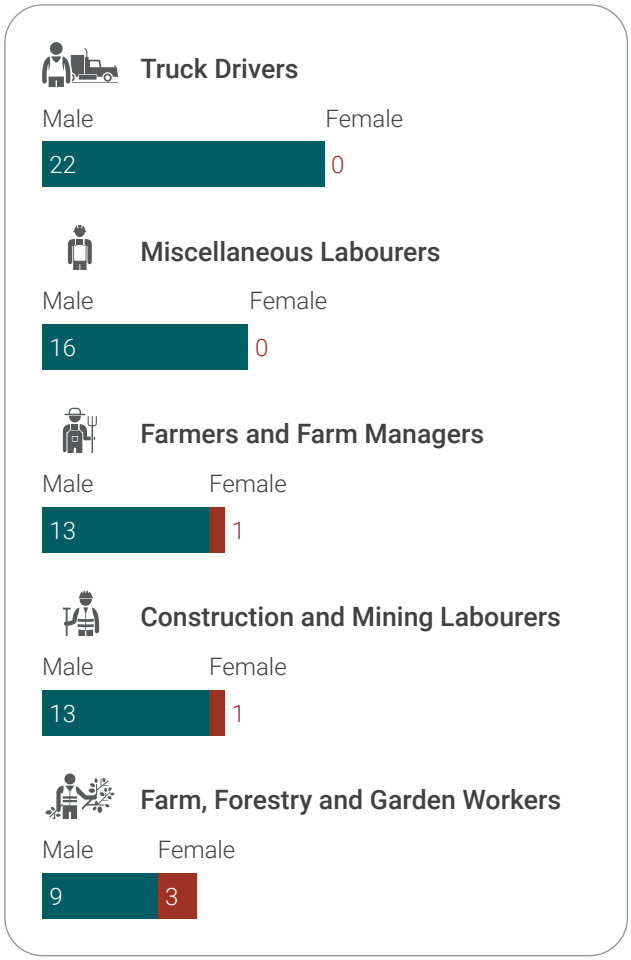


FIGURE 14 WORK-RELATED TRAUMATIC INJURY FATALITIES BY TOP FIVE OCCUPATIONS AND GENDER (2010-11 TO 2019-20P)

FIGURE 15 PROPORTION OF WORKFORCE BY TOP FIVE OCCUPATIONS AND GENDER (2010-11 TO 2019-20)

Key findings

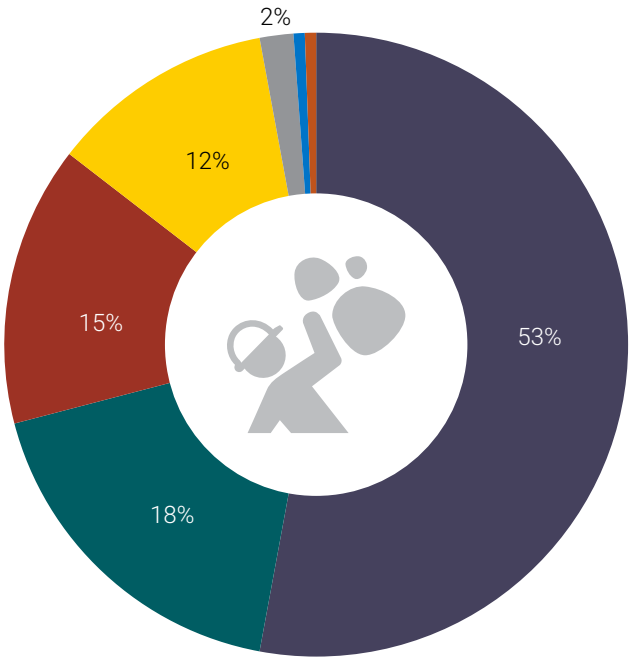
Many occupations that experienced higher work-related fatality numbers have a significant under-representation of women in their workforce.

The gender breakdown of work-related fatalities in these occupations (Figure 14) is similar to the gender breakdown of the workforce in these occupations (Figure 15).

Overall, the workforce in the five industries with the most traumatic injury work-related fatalities is 90 per cent male. This is similar to the overall proportion of work-related fatalities at 92 per cent male.

6 MECHANISM OVERVIEW

Mechanism major groups



- Being hit by moving objects
- Vehicle incidents and other
- Falls, trips and slips of a person
- Heat, electricity and other environmental factors
- Chemicals and other substances
- Hitting objects with a part of the body
- Sound and pressure

Three major groups recorded no work-related fatalities during the period: Biological factors, Body stressing and Mental stress.

Note: Mechanism subgroups are colour coded to related major groups.

Mechanism subgroups

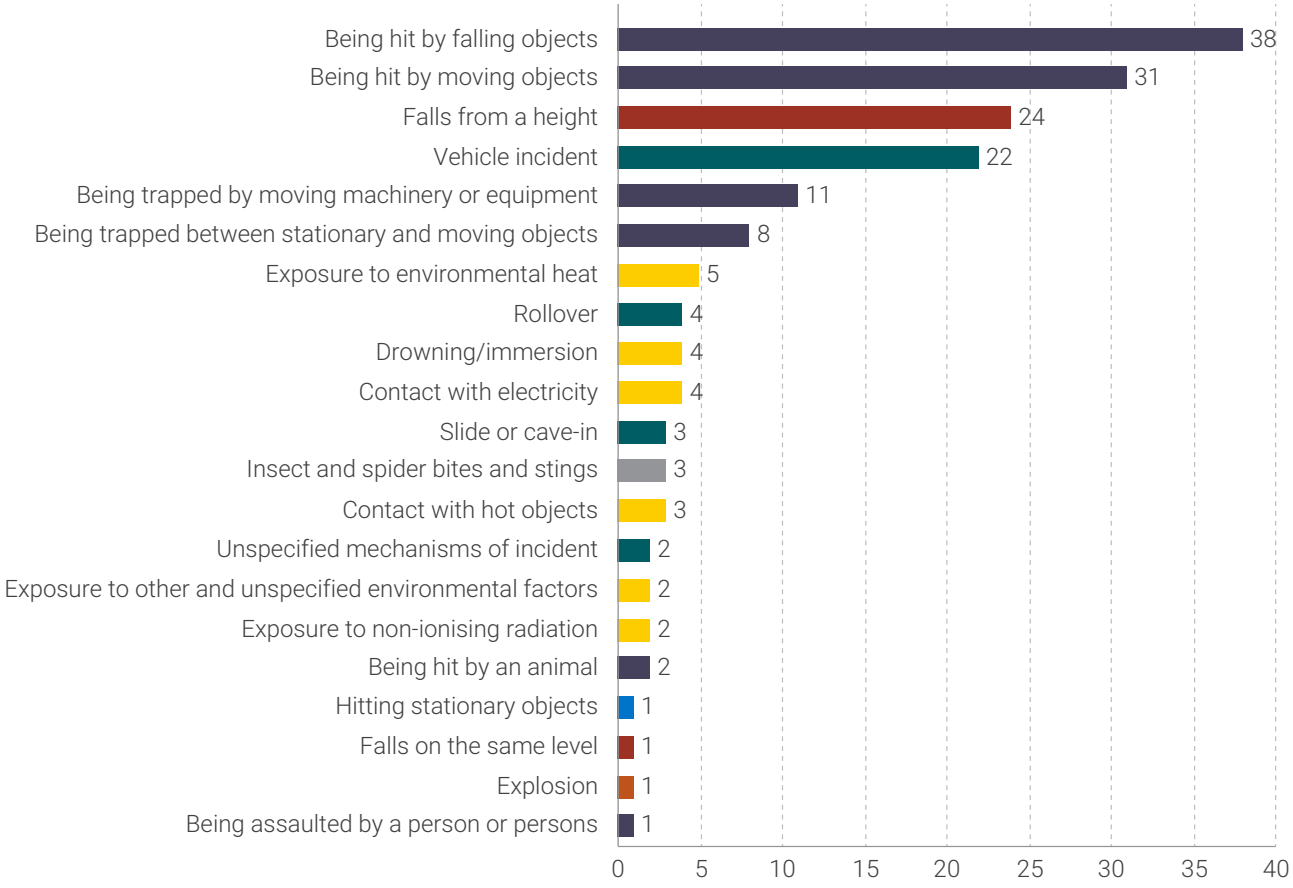


FIGURE 16 WORK-RELATED TRAUMATIC INJURY FATALITIES, BY MECHANISM SUBGROUPS AND MAJOR GROUPS (2010–11 TO 2019–20P)

Key findings

More than half of work-related fatalities coded to the mechanism major groups were a result of *Being hit by moving objects* (91 work-related fatalities).

The mechanism subgroups *Being hit by falling objects* (38 work-related fatalities) and *Being hit by moving objects* (31 work-related fatalities) were the two most prevalent mechanism of incident subgroups. These mechanisms are considered further in Sections 6.1 and 6.2.

Note: Being hit by moving objects is used when a person not travelling in a vehicle is injured as a result of being struck by a vehicle or striking against a vehicle. This excludes Vehicle incidents and other, which accounts for a further 18 per cent of work-related fatalities.

Road traffic accidents, even those that occur in the course of a person's work, are not considered work-related in Western Australia unless a clear relationship between the accident and the work being performed at the time of the accident is identified. Such a relationship might include work-related fatigue or poor vehicle maintenance.

More information on Recording of traumatic work related fatalities by WorkSafe is available from the Department's website.

TABLE 2 WORK-RELATED TRAUMATIC INJURY FATALITIES BY MECHANISM MAJOR GROUP (2010–11 TO 2019–20P)

Mechanism of injury	Number of fatalities
Being hit by moving objects	91
Vehicle incidents and other	31
Falls, trips and slips of a person	25
Heat, electricity and other environmental factors	20
Chemicals and other substances	3
Hitting objects with a part of the body	1
Sound and pressure	1
Biological factors	0
Body stressing	0
Mental stress	0

Key findings

Fifty-three per cent of work-related fatalities were a result of *Being hit by moving objects*. The subgroup breakdown for this mechanism was:

- Being hit by falling objects (38)
- Being hit by moving objects (31)
- Being trapped by moving machinery or equipment (11)
- Being trapped between stationary and moving objects (8)
- Being hit by an animal (2)
- Being assaulted by a person or persons (1).

6.1 Being hit by falling objects focus

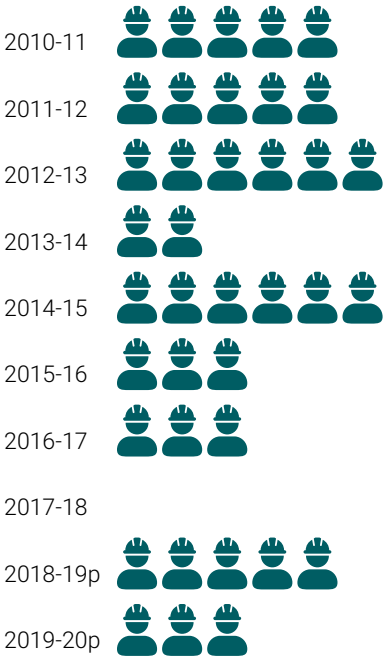


FIGURE 17 FALLING OBJECTS WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Key findings

Being hit by falling objects (falling objects) is the most common mechanism of incident and comprised 22 per cent of all work-related fatalities in Western Australia for the period 2010–11 to 2019–20p.

Common factors in relation to work-related traumatic injury fatalities involving *Being hit by falling objects* include metal, forklifts, trucks, manual lifting equipment, concrete panels, chains, cranes, vegetation, hydraulics, delivery, maintenance.

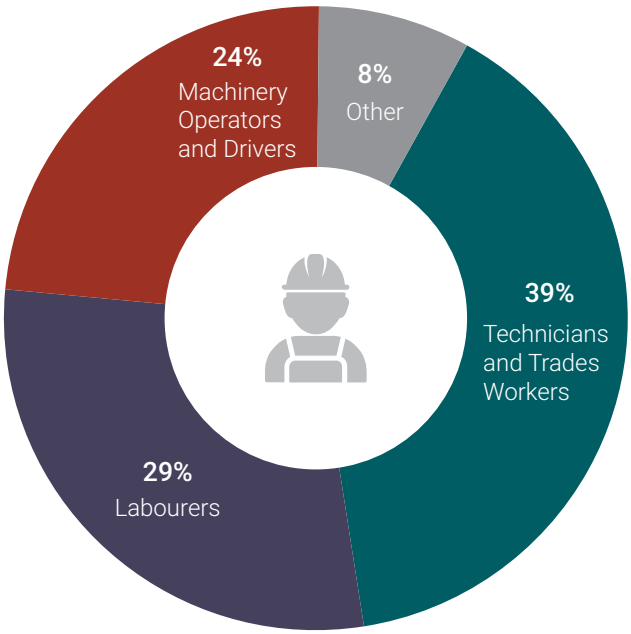


FIGURE 18 FALLING OBJECTS WORK-RELATED TRAUMATIC INJURY FATALITIES: OCCUPATIONS (2010–11 TO 2019–20P)

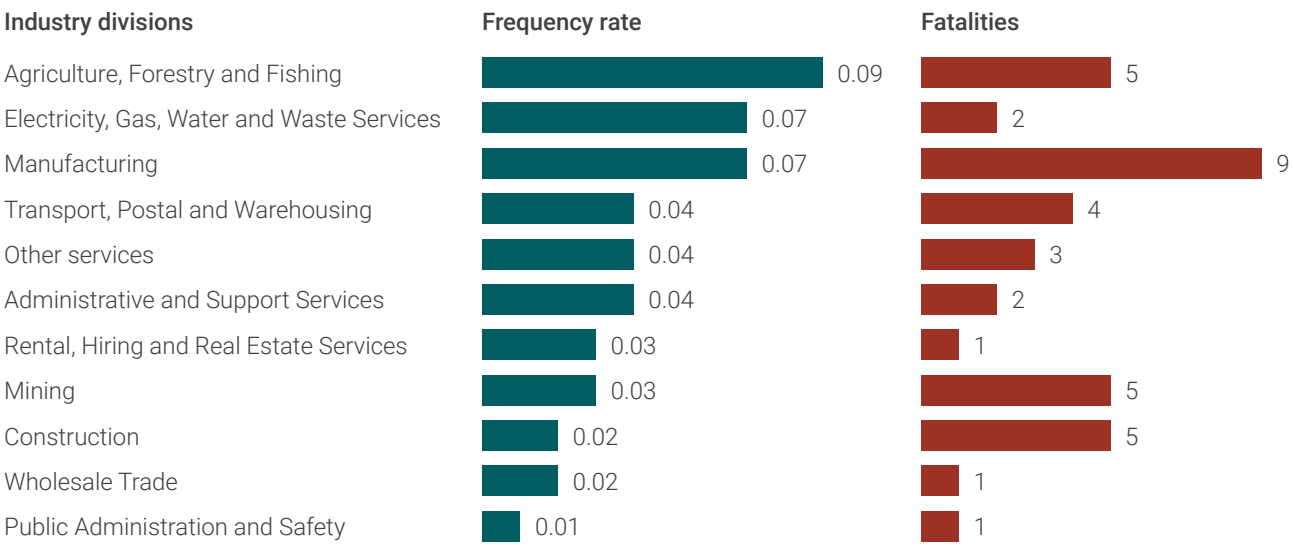
Key findings

As highlighted in Figure 18, most work-related fatalities involving falling objects occur in the three occupation major groups *Technicians and Trades Workers*, *Labourers* and *Machinery Operators and Drivers*.

One work-related fatality each occurred in the occupation major groups of *Managers; Sales Workers;* and *Clerical and Administrative Workers*.

No work-related fatalities occurred in the major groups *Professionals* or *Community and Personal Service Workers*.

The occupation with the greatest number of work-related fatalities involving falling objects is *Truck Drivers*, with five.



Note: Only industries where a fatality occurred are shown.

The frequency rate is a useful measure to make comparisons across industries, as it is scaled by the size of the workforce in each industry.

FIGURE 19 FALLING OBJECTS FREQUENCY RATE AND WORK-RELATED TRAUMATIC INJURY FATALITIES BY INDUSTRY DIVISION (2010–11 TO 2019–20P)

Key findings

Most work-related fatalities by industry caused by falling objects occurred in the *Manufacturing* division.

The industry of *Agriculture, Forestry and Fishing* had the most work-related fatalities occur per hour worked.

Electricity, Gas, Water and Waste Services and then *Manufacturing* have the second and third highest frequencies.

6.2 Being hit by moving objects focus

FIGURE 20 MOVING OBJECTS WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Key findings

Being hit by moving objects (moving objects) is the second most common mechanism of incident subgroup and is involved in 18 per cent of all work-related fatalities in Western Australia for the period 2010–11 to 2019–20p.

Most work-related fatalities involving moving objects occur in the three occupation major groups *Machinery Operators and Drivers*; *Labourers*; and *Managers*.

Note: Managers includes Farmers and Farm Managers.

TABLE 3 TOP FIVE BREAKDOWN AGENCIES OF MOVING OBJECTS WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Breakdown agencies	Number of fatalities
Tractors, agricultural or otherwise	5
Trucks, semi-trailers, lorries	5
Cars, station wagons, vans, utilities	4
Front end loaders, log handling plant, other loading plant	3
Graders, dozers, snowploughs, other scraping plant	2

Key findings

Breakdown agencies for *Being hit by moving objects* predominantly involved large vehicles.

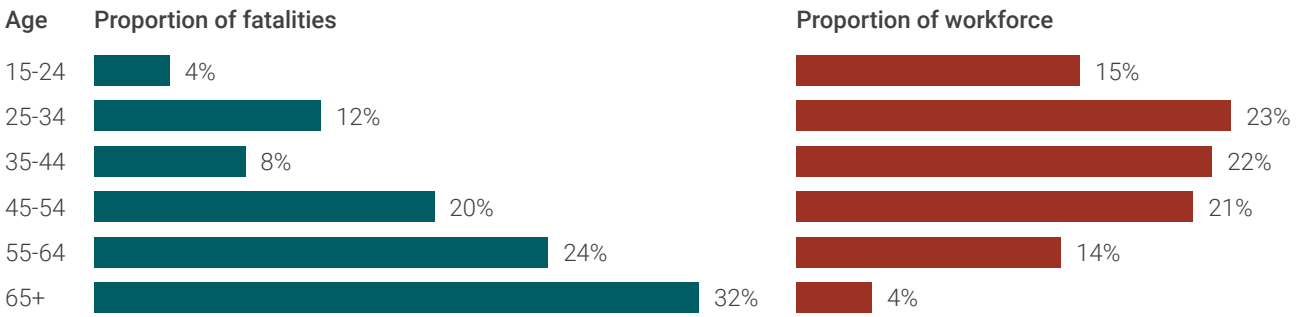


FIGURE 21 MOVING OBJECTS PROPORTION OF WORK-RELATED TRAUMATIC INJURY WORKER FATALITIES AND WORKFORCE BY AGE (2010–11 TO 2019–20P)

Key findings

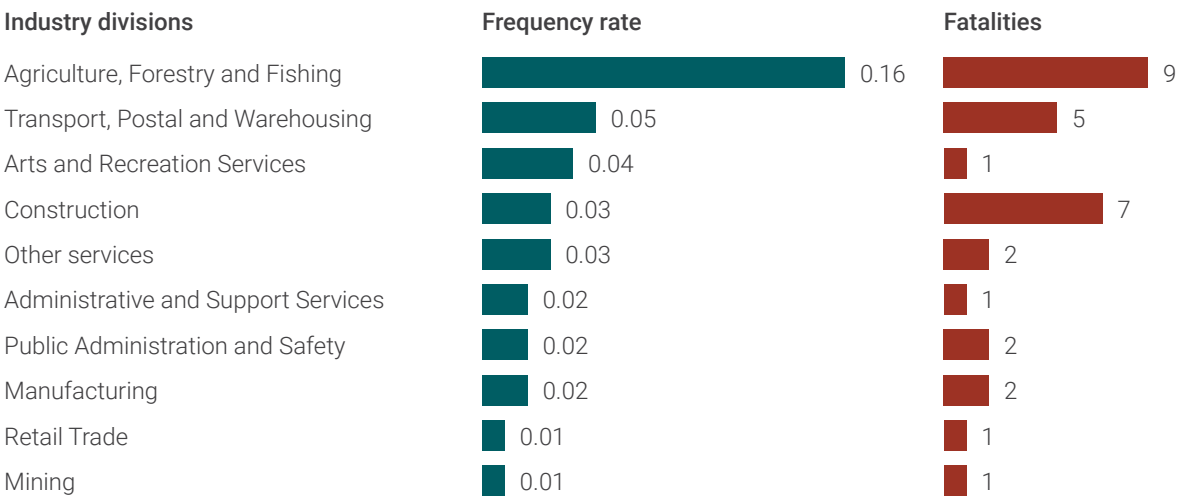
Older workers are disproportionately more likely to be fatally hit by moving objects, especially workers 65 and older.

Younger workers were less likely to be fatally hit by moving objects.

Summary of bystander work-related fatalities 2010–11 to 2019–20p

Bystanders make up a significant share of work-related fatalities. Six bystanders were fatally injured in workplace incidents when hit by moving objects during 2010–11 to 2019–20p.

- A member of the public was waiting in a vehicle near to where logs were being stacked when a large log rolled off the stack, fatally striking the person.
- A three-year-old was sitting in a tractor bucket while the tractor was being driven when the child alighted without the driver's knowledge and was fatally struck by the moving vehicle.
- An elderly person was assisting to round up cattle on a farm when they were struck and fatally injured by a farm ute.
- A backhoe that was being used to dig channels near a recreation centre fatally reversed into a patron.
- A tractor operating near a farming property fatally struck an elderly person at the residence.
- A prisoner was fatally crushed against a wall by a truck manoeuvring into a loading dock.



Note: Only industries where a fatality occurred are shown.

The frequency rate is a useful measure to make comparisons across industries, as it is scaled by the size of the workforce in each industry.

FIGURE 22 MOVING OBJECTS FREQUENCY RATE AND WORK-RELATED TRAUMATIC INJURY FATALITIES BY INDUSTRY DIVISION (2010–11 TO 2019–20P)

Key findings

Most work-related fatalities caused by moving objects were in the *Agriculture, Forestry and Fishing* division (Figure 22).

While the *Construction* industry has a relatively high number of work-related fatalities (7), the frequency rate for this industry is low.

The industry subdivision with the most persons fatally hit by moving objects is *Agriculture*, at eight of the 31 work-related fatalities.

7 LOCATION OVERVIEW

Key findings

Most work-related fatalities occurred in the Perth Metropolitan area (37 per cent), followed by the Pilbara (16 per cent) and the Wheatbelt (14 per cent).

Note: One fatality is recorded with an unknown location and is omitted from the figure.

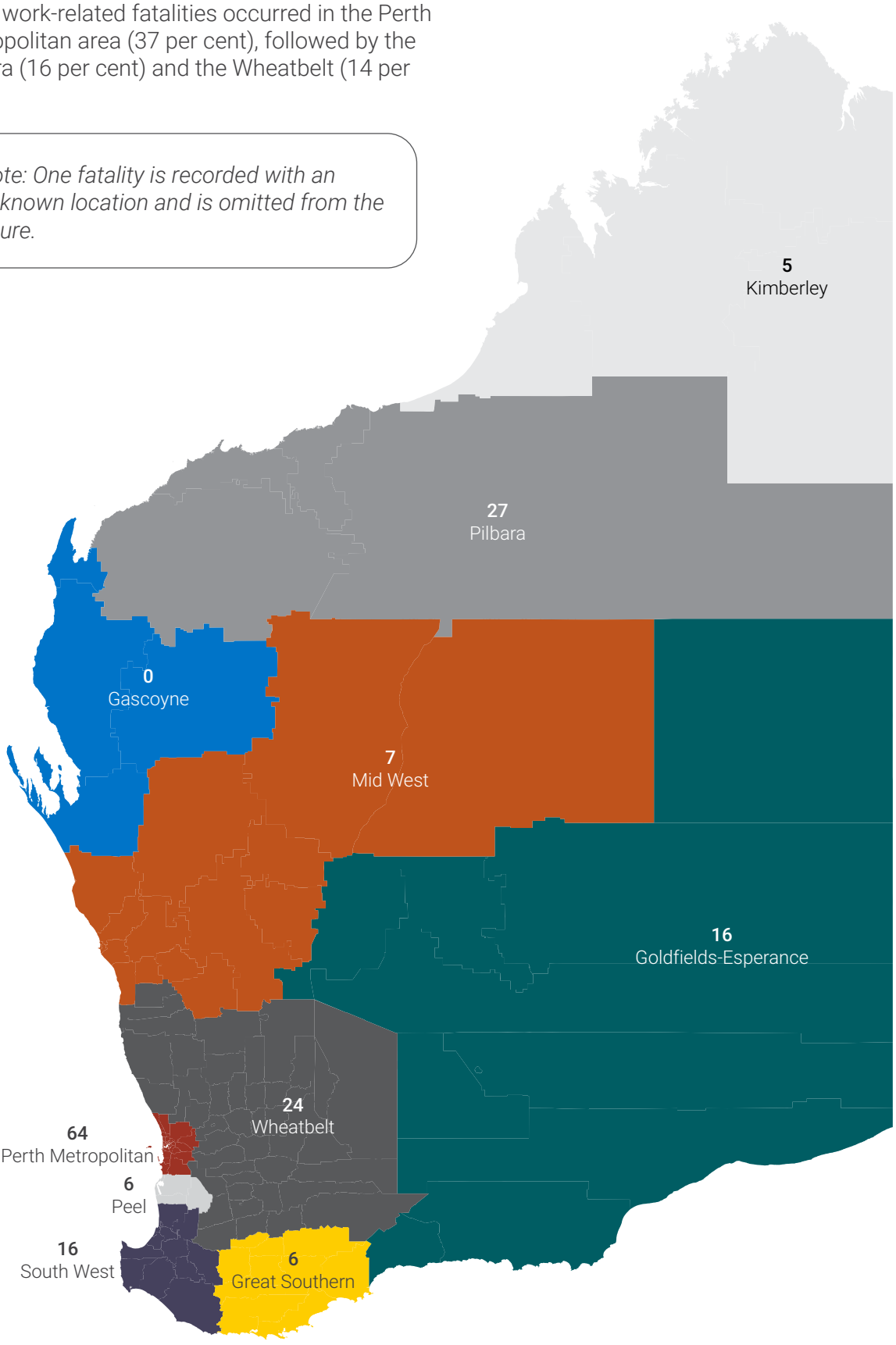
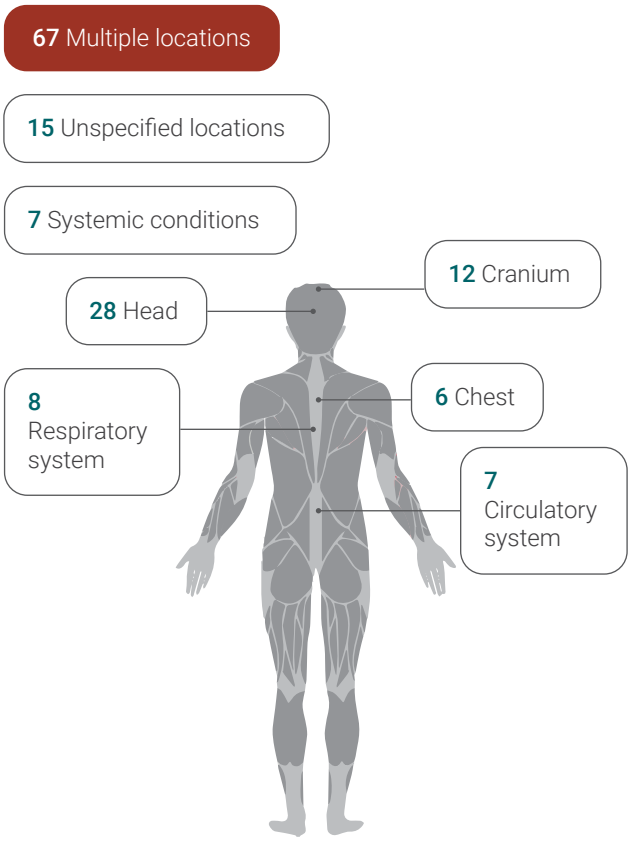


FIGURE 23 LOCATIONS OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

8 BODILY LOCATION OF INJURY OVERVIEW



Note: The bodily location of injury code is allocated to the part of the body affected by the most serious injury.

Because of the traumatic nature of work-related fatality events, it is common for injuries to occur in multiple locations across the body. The top five bodily locations have been included.

FIGURE 24 BODILY LOCATIONS OF INJURY OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Key findings

The head or neck is involved in 25 per cent of all work-related fatal incidents.

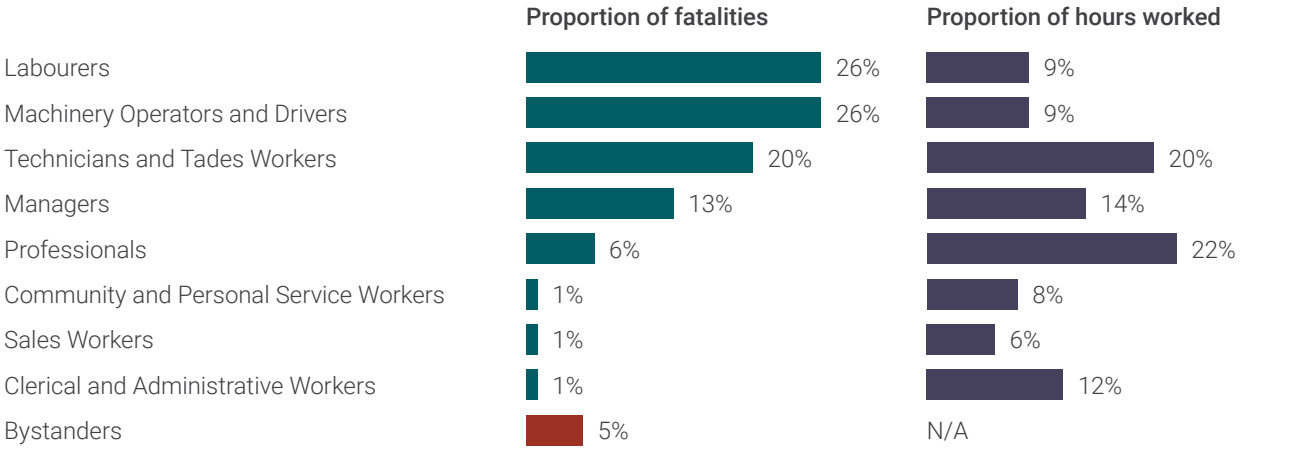
From the subset of incidents where a specific bodily location of incident can be identified, the head and neck were involved in 52 per cent of cases, and the torso in 22 per cent of cases.

Incidents involving the circulatory system were primarily attributed to heat stroke.

Incidents involving the respiratory system were primarily attributed to drowning.

Incidents involving other systemic conditions were primarily attributed to electrocution.

9 OCCUPATIONS OVERVIEW



Note: There are eight occupation major groups under the Australian and New Zealand Standard Classification of Occupations First Edition (ANZSCO) Classification system.

Bystanders do not fall under an ANZSCO major group, but have been included as a separate category.

Proportions of work-related fatalities and hours worked in Western Australia for each occupation major group are shown in the figure above.

FIGURE 25 WORK-RELATED TRAUMATIC INJURY FATALITIES AND HOURS WORKED BY OCCUPATION MAJOR GROUP (2010–11 TO 2019–20P)

TABLE 4 TOP FIVE OCCUPATION MAJOR GROUPS OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Occupations	Number of fatalities
Labourers	45
Machinery Operators and Drivers	44
Technicians and Trades Workers	35
Managers	23
Professionals	11

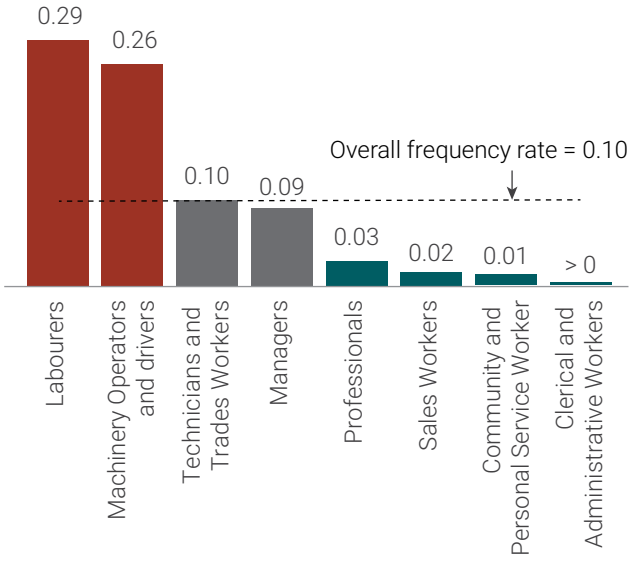
Key findings

If each occupation had a number of work-related fatalities proportionate to their share of the workforce, the bars in Figure 25 representing the proportion of work-related fatalities and proportion of workforce would be of the same length for any given occupation.

This is not the case for most occupation major groups. Many occupation major groups with a high proportion of the workforce, such as *Sales Workers* and *Clerical and Administrative Workers*, have very few work-related fatalities over the period 2010–11 to 2019–20p.

Other occupation major groups that make up a relatively small proportion of the workforce, such as *Labourers* and *Machinery Operators and Drivers* have large numbers of work-related fatalities as can be seen in Table 4.

Note: Managers includes Farmers and Farm Managers.



Note: Occupations with a disproportionately high share of work-related fatalities relative to their proportion of the workforce are shown in red, and those with a disproportionately low share are shown in teal.

FIGURE 26 FREQUENCY RATE OF WORK-RELATED TRAUMATIC INJURY FATALITIES BY OCCUPATION MAJOR GROUP (2010–11 TO 2019–20P)

Key findings

The overall frequency rate, for all occupation major groups, for the period 2010–11 to 2019–20p, was 0.10.

Most occupation major groups have a lower frequency rate, with only two having a significantly higher frequency rate than overall.

Labourers have both the highest number of work-related fatalities and the highest frequency rate, closely followed by *Machinery Operators and Drivers*.

Note: Frequency rates compare the number of work-related fatalities per million hours worked across occupation major groups, adjusting for total hours worked in each occupation.

When frequency rates are considered, useful comparison between different occupations can be made.

Nine bystanders were fatally injured in work-related incidents

6
Hit by moving objects

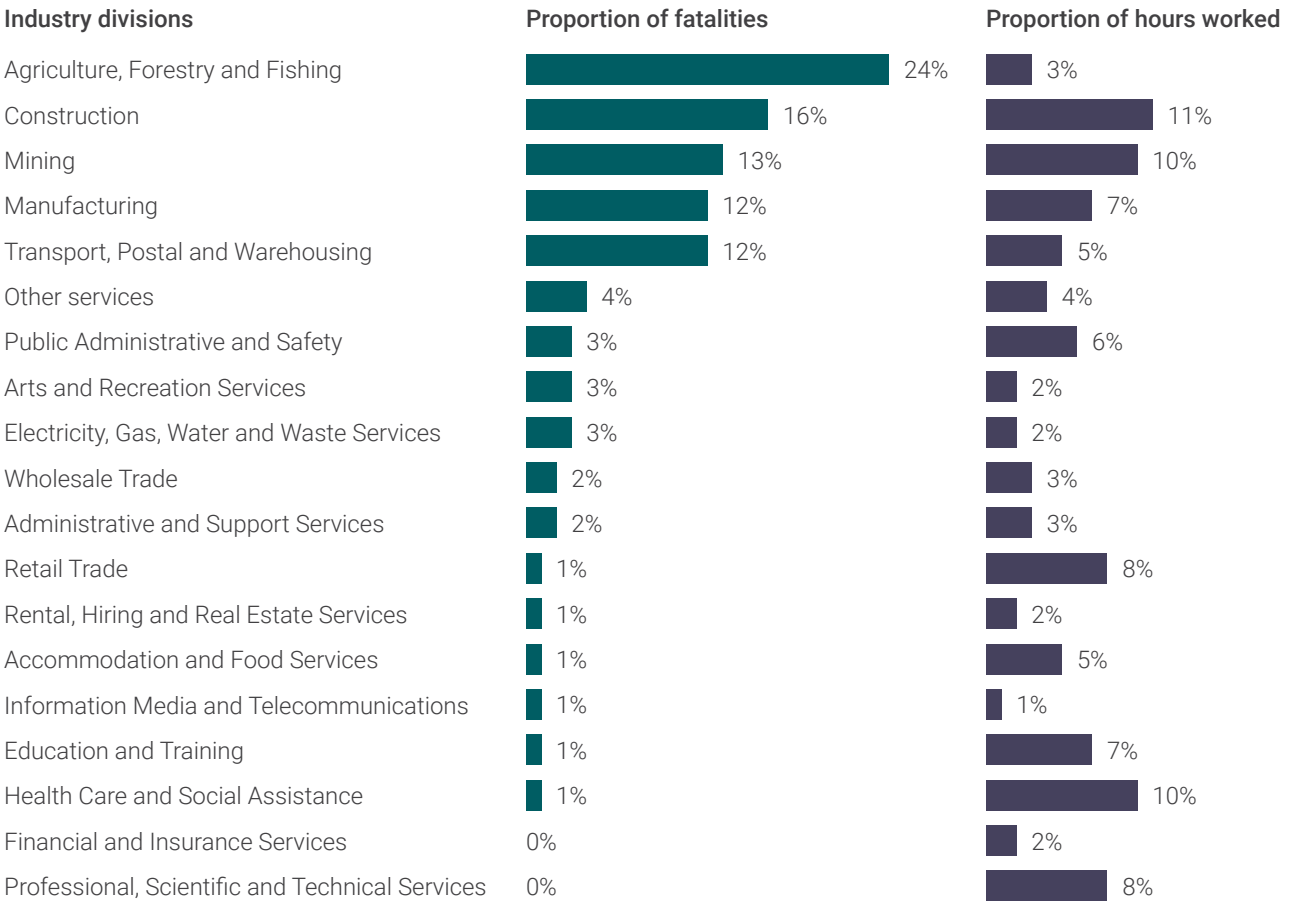
2 Vehicle incident
1 Fall from height

Note: Bystanders may include persons such as visitors, customers, service recipients, volunteers, or simply passers-by. Some bystanders may be employed in work entirely unrelated to the work-activity involved in the fatal incident, but many are not workers.

While all of these bystanders have been determined as work-related fatalities, the work activity is not related to their own employment.

Bystanders are not classed under any occupation group and are excluded from the hours worked calculations in Figure 26.

10 INDUSTRY OVERVIEW



Note: There are 19 Industry divisions under the Australian and New Zealand Standard Industry Classification 2006 Edition (ANZSIC). Proportions of work-related fatalities and hours worked in Western Australia for each industry division are shown in Figure 27 above.

FIGURE 27 WORK-RELATED TRAUMATIC INJURY FATALITIES AND HOURS WORKED BY INDUSTRY DIVISION (2010–11 TO 2019–20P)

TABLE 5 TOP FIVE INDUSTRY DIVISIONS OF WORK-RELATED TRAUMATIC INJURY FATALITIES (2010–11 TO 2019–20P)

Industry divisions	Number of fatalities
Agriculture, Forestry and Fishing	41
Construction	28
Mining	23
Transport, Postal and Warehousing	21
Manufacturing	21

Key findings

The size of each industry's workforce varies. Many industry divisions with a high proportion of the workforce, such as *Professional, Scientific and Technical Services* and *Health Care and Social Assistance*, have low or no work-related fatalities over the period 2010–11 to 2019–20p (Figure 27).

Other industries that make up a relatively small proportion of the workforce, such as *Agriculture, Forestry and Fishing* and *Transport, Postal and Warehousing* have large numbers of work-related fatalities (Table 5).

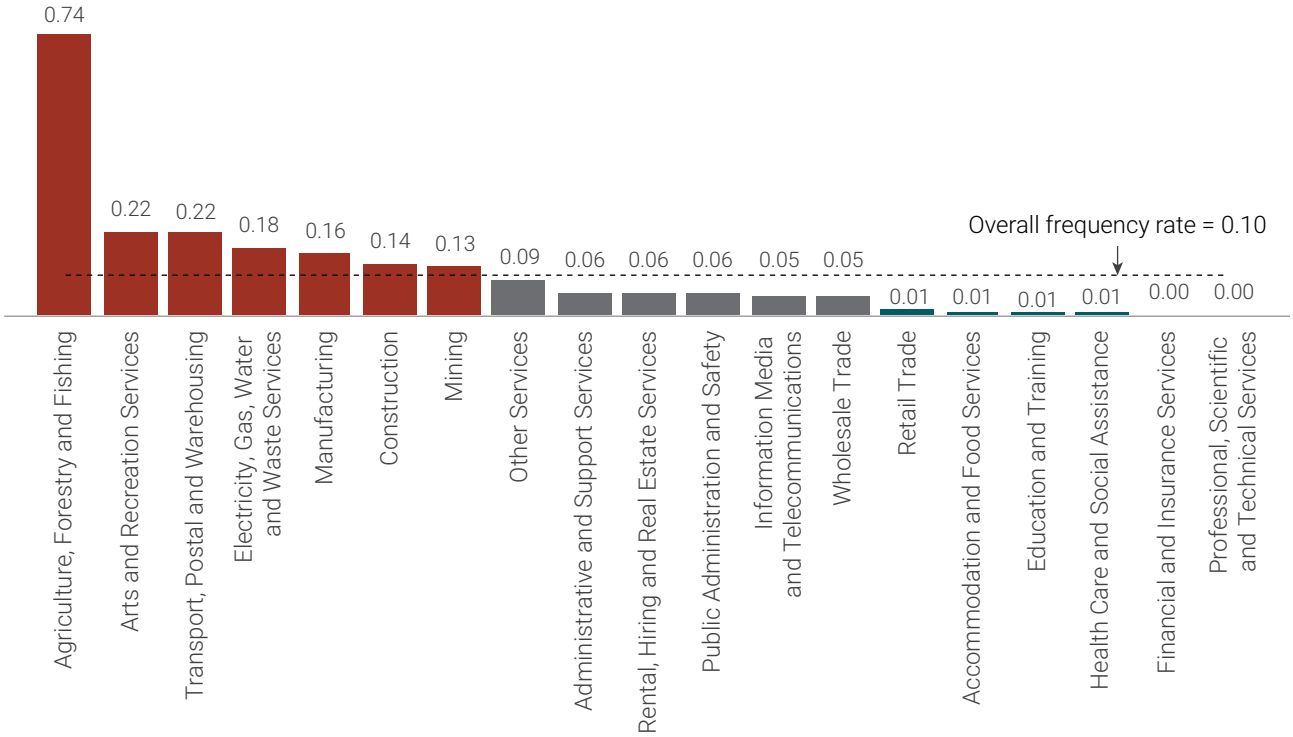


FIGURE 28 FREQUENCY RATE OF WORK-RELATED TRAUMATIC INJURY FATALITIES BY INDUSTRY DIVISION (2010–11 TO 2019–20P)

Note: Frequency rates compare the number of work-related fatalities per million hours worked across industries, adjusting for total hours worked in each industry.

When frequency rates are considered, useful comparison between different industries can be made.

Divisions with a disproportionately high share of work-related fatalities relative to their proportion of the workforce are shown in red, and those with a disproportionately low share are teal.

Key findings

The overall frequency rate for all industry divisions, for the period 2010–11 to 2019–20p, was 0.10. Most industry divisions have a lower frequency rate, with only seven of the 19 divisions having a higher frequency rate than overall.

Agriculture, Forestry and Fishing has both the highest number of work-related fatalities and the highest frequency rate. It will be considered in detail in Section 10.1.

Other industry divisions have been highlighted due to historically higher levels of work-related fatalities compared with other divisions and will be covered in Sections 10.2 to 10.5.

10.1 Agriculture, Forestry and Fishing

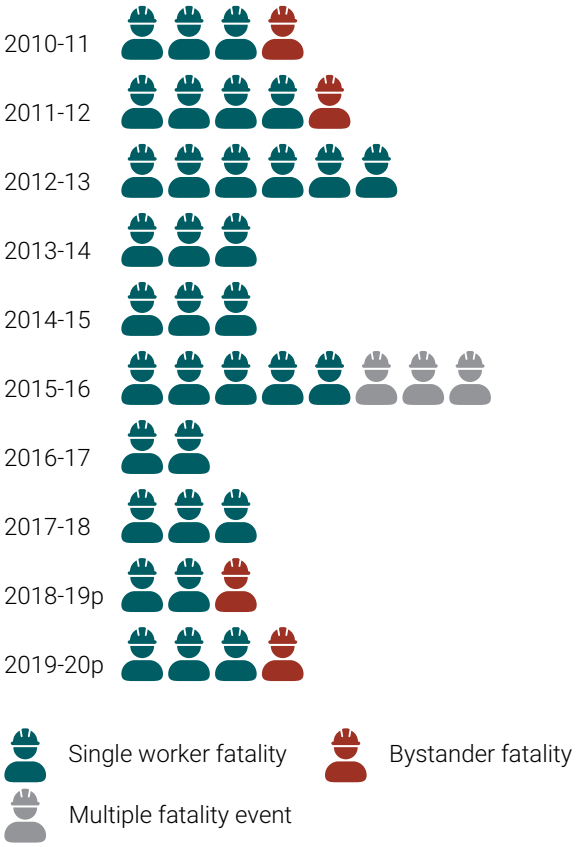


FIGURE 29 WORK-RELATED TRAUMATIC INJURY FATALITIES IN AGRICULTURE, FORESTRY AND FISHING (2010–11 TO 2019–20P)

Key findings

Despite relatively few hours worked compared to many other industries, the *Agriculture, Forestry and Fishing* industry has the highest number of work-related fatalities for the period 2010–11 to 2019–20p, with 41 fatalities. This is followed by the *Construction* industry with 28 work-related fatalities (Figure 28).

The fatality frequency rate in the *Agriculture, Forestry and Fishing* industry is over three times as high as the industry with the second highest work-related fatality frequency rate (*Arts and Recreation Services*), and over seven times as high as the overall rate across industries.

Over three quarters of *Agriculture, Forestry and Fishing* industry work-related fatalities occurred in the *Agriculture* subdivision.

TABLE 6 MECHANISMS OF INCIDENT FOR WORK-RELATED TRAUMATIC INJURY FATALITIES IN THE AGRICULTURE, FORESTRY AND FISHING INDUSTRY (2010–11 TO 2019–20P)

Mechanism of incident subgroup	Number of fatalities
Vehicle incident	10
Being hit by moving objects	9
Being hit by falling objects	5
Drowning/immersion	4
Rollover	4
Being trapped by moving machinery or equipment	3
Being hit by an animal	2
Explosion	1
Exposure to other and unspecified environmental factors	1
Falls from a height	1
Insect and spider bites and stings	1

Key findings

The top two mechanism of incident subgroups for *Agriculture, Forestry and Fishing* are *Vehicle incident* and *Being hit by moving objects*.

Twenty per cent of work-related fatalities were in persons aged 70 years and older.

The occupations recording the greatest number of work-related fatalities in the *Agriculture, Forestry and Fishing* industry were:

- Farmers and Farm Managers (34%)
- Farm, Forestry and Garden Workers (24%)
- Air and Marine Transport Professionals (12%).

The top three agencies of incident in the *Agriculture, Forestry and Fishing* industry for the period 2010–11 to 2019–20p were:

- Mobile Plant and Transport (61%)
  - Tractors, agricultural or other (15%)
  - Industrial aircraft (12%)
  - All terrain vehicles (ATV) (10%)
- Environmental Agencies (15%)
- Animal, Human and Biological Agencies (10%).

Examples of Agriculture, Forestry and Fishing work-related traumatic injury fatalities 2010–11 to 2019–20p

- A tree feller was trimming regrowth on Jarrah trees when another tree's branch struck him, causing fatal head injuries.
- A teenager sustained fatal injuries following a quad bike accident that occurred while returning the quad bike to a shed after carrying out unpaid work on a family farm.
- A farmer was kicked by a sheep, which fatally aggravated an existing hernia.
- A casual farm worker sustained fatal injuries when she was struck by a bull and crushed against a fence. The worker had been guiding an injured bull into a holding yard to administer treatment.
- A worker was using a quad bike to move cattle through a farm gate when he was repeatedly stung by bees and suffered a fatal reaction.
- A young farm hand was working underneath a hydraulically supported steel bucket to repair a rock picker. When the hydraulic hose was disconnected, the bucket fell causing fatal crush injuries.
- A farmer was fatally thrown from a quad bike while driving on a gravel livestock laneway.
- An elderly farmer was burning windrows in a paddock when his vehicle caught fire while he was inside.
- A fishing vessel sank resulting in the fatalities of all three workers aboard.

10.2 Construction

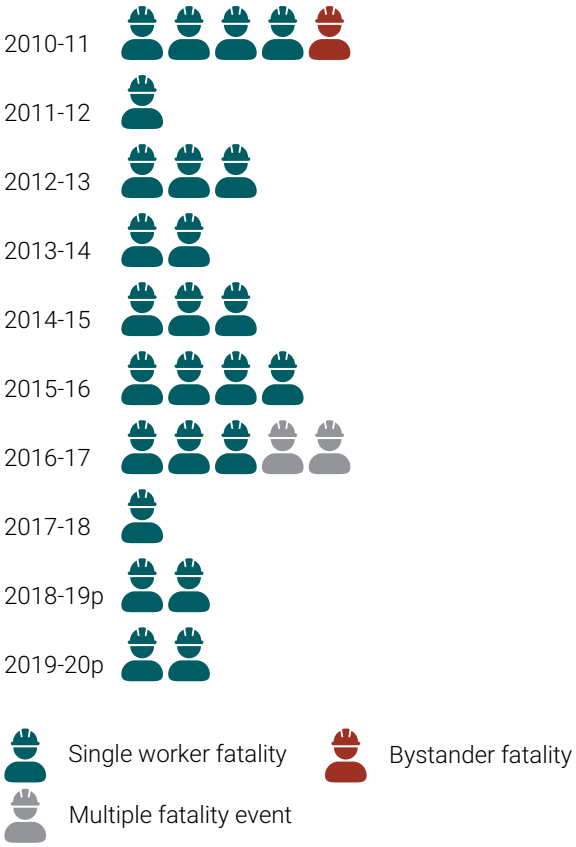


FIGURE 30 WORK-RELATED TRAUMATIC INJURY FATALITIES IN CONSTRUCTION (2010–11 TO 2019–20P)

Key findings

The *Construction* industry has the second highest number of work-related fatalities in the period 2010–11 to 2019–20p, with 28.

More hours are worked in *Construction* than any other industry; therefore, the work-related fatality frequency rate in the *Construction* industry is the sixth highest of the 19 industry sectors (Figure 28).

For a given hour worked, a person in the *Construction* industry has 1.4 times the average risk across all industries of a work-related fatality.

Thirty-nine per cent of *Construction* industry work-related fatalities occurred in the *Building Construction* subdivision.

This industry subdivision works 21 per cent of the entire hours of the industry and work-related fatalities for this subdivision are disproportionately high.

Twenty-nine per cent of work-related fatalities occurred in the *Non-residential Building Construction* industry group alone, despite this industry group working only four per cent of the entire hours of the industry.

TABLE 7 MECHANISMS OF INCIDENT FOR WORK-RELATED TRAUMATIC INJURY FATALITIES IN THE CONSTRUCTION INDUSTRY (2010–11 TO 2019–20P)

Mechanism of incident subgroup	Number of fatalities
Being hit by moving objects	7
Falls from a height	7
Being hit by falling objects	5
Contact with electricity	4
Being trapped between stationary and moving objects	2
Exposure to environmental heat	1
Slide or cave-in	1
Unspecified mechanisms of incident	1

Key findings

The top two mechanism of incident subgroups for *Construction* are *Being hit by moving objects* and *Falls from a height* (Table 7).

Sixty-one per cent of work-related fatalities occurred within the Perth Metropolitan Region.

Eleven per cent of work-related fatalities were in persons younger than 20.

Only one of the 28 work-related fatalities was female.

The occupations recording the greatest number of work-related fatalities in the *Construction* industry were:

- Construction and Mining Labourers (32%)
- Miscellaneous Labourers (14%)
- Glaziers, Plasterers and Tilers (11%).

The top four breakdown agencies of incident in the *Construction* industry were:

- Environmental Agencies (25%)
- Machinery and Mainly Fixed Plant (18%)
- Materials and Substances (18%)
- Mobile Plant and Transport (18%).

Examples of Construction work-related traumatic injury fatalities 2010–11 to 2019–20p

- A construction worker was fatally injured by a length of cut pipe when a section of pipe was pressurised and came loose.
- A self-employed builder fell five metres through a skylight, sustaining fatal injuries.
- A teenager fatally fell 10-12 metres through a hole in a glass atrium ceiling that was being installed.
- A scaffolder on his second day at work fatally collapsed from heat stress.
- A labourer fell from a limestone wall, grabbing a block suspended in a clamp as he fell, which struck him on the head causing fatal injuries.
- A crane was moving a one tonne panel when a gust of wind caused the panel to fall. It fell onto a teenaged dogman who was fatally injured.
- A plumber was working in a deep trench when a water main burst, filling the trench and overcoming the worker.
- A construction worker was fatally struck in the head by a 500 kg metal support beam.
- Two workers were fatally crushed when a concrete panel fell from the rear of a delivery truck that was making a delivery to a construction site.
- A 26-year-old glazier received fatal crush injuries when a crate of plate glass fell onto him during unloading.

10.3. Mining

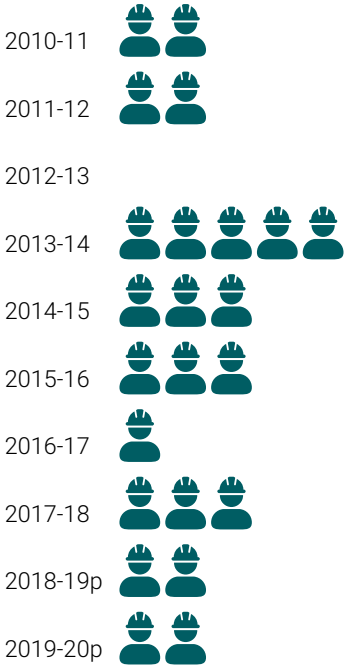


FIGURE 31 WORK-RELATED TRAUMATIC INJURY FATALITIES IN MINING (2010–11 TO 2019–20P)

Key findings

During the period 2010–11 to 2019–20p, there have been 23 work-related fatalities in the *Mining* industry (Figure 31).

The *Mining* industry has the third highest number of work-related fatalities recorded for this period (Figure 28).

The fatality frequency rate in the *Mining* industry is the seventh highest of the 19 industry divisions.

However, the *Mining* industry works the second most hours of any industry in Western Australia, which leads to a relatively low frequency rate.

Over two thirds of *Mining* industry work-related fatalities occurred in the *Metal Ore Mining* subdivision.

TABLE 8 MECHANISMS OF INCIDENT FOR WORK-RELATED TRAUMATIC INJURY FATALITIES IN THE MINING INDUSTRY (2010–11 TO 2019–20P)

Mechanism of incident subgroup	Number of fatalities
Being hit by falling objects	5
Being trapped by moving machinery or equipment	5
Being trapped between stationary and moving objects	3
Vehicle incident	3
Exposure to environmental heat	2
Slide or cave-in	2
Being hit by moving objects	1
Falls from a height	1
Insect and spider bites and stings	1
Unspecified mechanisms of incident	1

Key findings

The top two mechanism of incident subgroups for *Mining* are *Being hit by falling objects* and *Being trapped by moving machinery or equipment* (Table 8).

Workers aged 25–34 represent 39 per cent of *Mining* work-related fatalities, despite representing only 30 per cent of the Western Australian *Mining* industry workforce.

All work-related fatalities were male.

The occupations recording the highest number of work-related fatalities in the *Mining* industry were:

- Stationary Plant Operators (39%)
- Mechanical Engineering Trades Workers (17%)
- Truck Drivers (13%).

The top three agencies of incident in the *Mining* industry for the period 2010–11 to 2019–20p were:

- Mobile Plant and Transport (39%)
  - Trucks, semi-trailers, lorries (17%)
  - Integrated mining plant (13%)
- Environmental Agencies (22%)
- Machinery and Mainly Fixed Plant (22%).

Examples of Mining work-related traumatic injury fatalities 2010–11 to 2019–20p

- A worker was fatally crushed between the drill rod centraliser arm and drill head while carrying out maintenance on a blast-hole drill rig.
- While working on a dozer, the belly plate fatally crushed a fitter.
- An operator was working underground preparing stope charging using an elevating work platform when they accidentally activated the basket controls. The basket moved upwards, fatally crushing the operator against the ceiling.
- An electrician received fatal crush injuries while working under a motor in the ore crushing area.
- A senior field technician was performing survey reconnaissance in an exploration area when the effects associated with heat stress proved fatal.
- A boilermaker working inside a tank during shutdown sustained fatal crush injuries when a gantry above collapsed.
- A production operator was fatally crushed between the handrail and mechanical ladder at the rear of a face shovel.
- A haul truck operator was fatally injured when the truck rolled over on a waste dump road.
- A worker fatally collapsed from heat stroke while working underground on a night shift.
- A surveyor was working alone when they were fatally stung by a bee.

10.4 Manufacturing

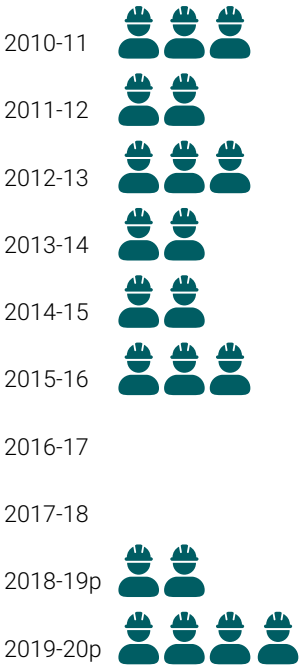


FIGURE 32 WORK-RELATED TRAUMATIC INJURY FATALITIES IN MANUFACTURING (2010–11 TO 2019–20P)

Key findings

There have been 21 work-related fatalities in the *Manufacturing* industry (Figure 32).

The *Manufacturing* industry ties for the fourth-highest number of work-related fatalities recorded during this period 2010–11 to 2019–20p with the *Transport, Postal and Warehousing* industry (Table 5).

The fatality frequency rate in the *Manufacturing* industry (Figure 28) is the fifth highest of the 19 industry divisions.

The top three industry subdivisions for *Manufacturing* were:

- Fabricated Metal Product Manufacturing (5)
- Food Product Manufacturing (4)
- Non-metallic Mineral Product Manufacturing (3).

TABLE 9 MECHANISMS OF INCIDENT FOR WORK-RELATED TRAUMATIC INJURY FATALITIES IN THE MANUFACTURING INDUSTRY (2010–11 TO 2019–20P)

Mechanism of incident subgroup	Number of fatalities
Being hit by falling objects	9
Falls from a height	5
Being trapped by moving machinery or equipment	3
Being hit by moving objects	2
Being trapped between stationary and moving objects	2

Key findings

The top two mechanisms of incident subgroups for Manufacturing are Being hit by falling objects and Falls from a height (Table 9).

The occupation major group *Machinery Operators and Drivers* recorded 38 per cent of *Manufacturing* work-related fatalities.

The occupations recording the greatest number of work-related fatalities in the *Manufacturing* industry were:

- Machine Operators (14%)
- Truck Drivers (14%)
- Chief Executives, General Managers and Legislators (10%)
- Fabrication Engineering Trades Workers (10%)
- Mechanical Engineering Trades Workers (10%).

The top agencies of incident in the *Manufacturing* industry for the period 2010–11 to 2019–20p were:

- Machinery and Mainly Fixed Plant (52%)
  - Forklift trucks (24%)
  - Refrigeration plant (10%)
- Materials and substances (10%)
- Non-powered handtools, appliances and equipment (10%)
- Other and unspecified agencies (10%).

Examples of Manufacturing work-related fatalities 2010–11 to 2019–20p

- A truck driver was fatally hit by a one tonne steel pipe, which fell when being unloaded from his truck by a forklift.
- A worker had been working in an elevator when he fell down the lift shaft incurring fatal injuries.
- A welder was working with a submerged arc welding machine mounted on a large boom fitted to a vertical mast. The boom suddenly fell onto the worker causing fatal injuries.
- A managing director was fatally hit by a reversing front-end loader as he was walking through the workplace yard.
- A scaffolder was fatally injured when he entered a manway into a digester vessel where scaffolding had been removed and fell 12 metres.
- While standing on pallet held by a forklift to wash a truck, a truck driver was fatally injured when he was struck by a pallet after falling three metres.
- A labourer was fatally injured after being struck by part of a steel drum that was being cut with an angle grinder. A spark ignited flammable gas that remained in the drum causing an explosion.
- A factory worker received fatal injuries when he was struck by a falling lathe cutting tool which had fractured.
- While cleaning an industrial mixer, a worker became entangled and sustained fatal injuries.
- A factory hand was fatally injured when he was grabbed by a robotic pallet lifter inside a loading chute.

10.5 Transport, Postal and Warehousing

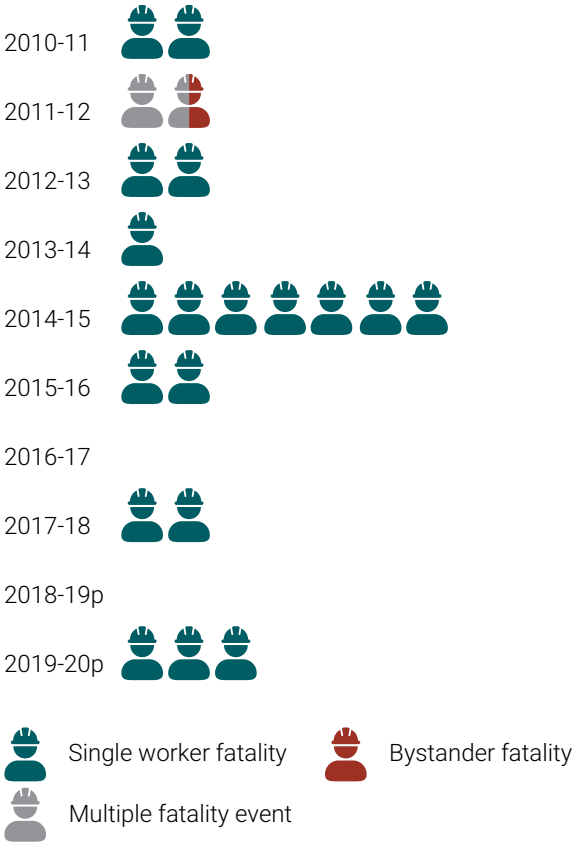


FIGURE 33 WORK-RELATED TRAUMATIC INJURY FATALITIES IN TRANSPORT, POSTAL AND WAREHOUSING (2010–11 TO 2019–20P)

Key findings

There have been 21 work-related fatalities in the *Transport, Postal and Warehousing* industry (Figure 33).

The *Transport, Postal and Warehousing* industry ties for the fourth-highest number of work-related fatalities recorded during the period 2010–11 to 2019–20p with the *Manufacturing* industry (Table 5).

The work-related fatality frequency rate in the *Transport, Postal and Warehousing* industry (Figure 28) is the third highest after *Agriculture, Forestry and Fishing* and *Arts and Recreation Services*.

The industry subdivisions recording the greatest number of work-related fatalities in the *Transport, Postal and Warehousing* industry were:

- Road Transport (62%)
- Warehousing and Storage Services (10%)
- Water Transport (10%).

TABLE 10 MECHANISMS OF INCIDENT FOR WORK-RELATED TRAUMATIC INJURY FATALITIES IN THE TRANSPORT, POSTAL AND WAREHOUSING INDUSTRY (2010–11 TO 2019–20P)

Mechanism of incident subgroup	Number of fatalities
Vehicle incident	6
Being hit by moving objects	5
Being hit by falling objects	4
Exposure to environmental heat	2
Falls from a height	1
Falls on the same level	1
Insect and spider bites and stings	1
Unspecified mechanisms of incident	1

Key findings

The top two mechanism of incident subgroups for *Transport, Postal and Warehousing* are *Vehicle incident* and *Being hit by moving objects*.

Workers aged 35–44 represent 52 per cent of all *Transport, Postal and Warehousing* work-related fatalities, despite representing only 22 per cent of the Western Australian *Transport, Postal and Warehousing* industry workforce.

One work-related fatality was representing only female.

The occupations recording the greatest number of work-related fatalities in the *Transport, Postal and Warehousing* industry were:

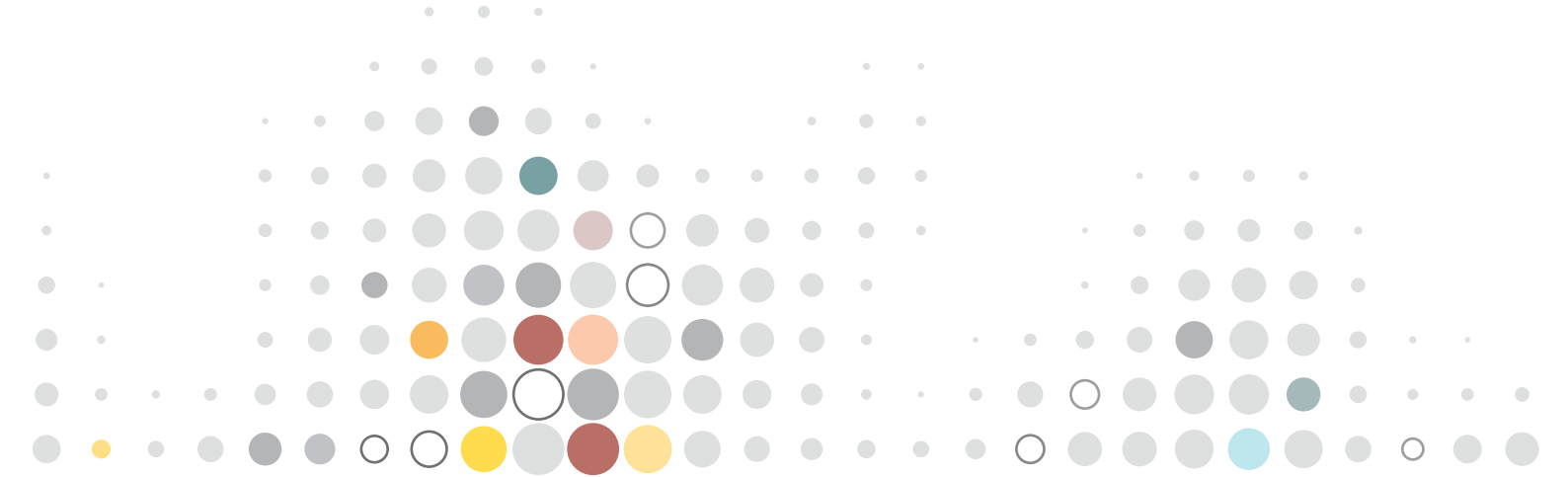
- Machinery Operators and Drivers (71%)
  - Truck Drivers (62%)
- Air and Marine Transport Professionals (10%).

The top three agencies of incident in the *Transport, Postal and Warehousing* industry for the period 2010–11 to 2019–20p were:

- Mobile plant and transport (57%)
  - Trucks, semi-trailers, lorries (38%)
  - Trains (10%)
- Animal, human and biological agencies (14%)
- Materials and substances (10%).

Examples of Transport, Postal and Warehousing work-related fatalities 2010–11 to 2019–20p

- A truck driver was transporting pigs in a truck and semi-trailer when the truck rolled, fatally trapping the driver. Maintenance issues were a factor.
- An elderly truck driver sustained fatal injuries in a vehicle crash. Maintenance issues were a factor.
- A deck worker attempting to shelter from bad weather and secure cargo was fatally crushed between a container and a cargo skip when a wave came over the back deck of the vessel.
- An elderly contractor was fatally crushed between a prime mover and a stationary truck.
- An employee was found deceased a kilometre from his truck after it became bogged.
- A truck driver was fatally crushed beneath his truck's right low-loader ramp while lowering the hydraulic ramps.
- A fatality occured due to environmental conditions, after a seaman fell into the ocean from a ship's ladder whilst reading water level markings on the ship's hull.
- A pilot was involved in a fatal helicopter crash whilst flying to a bulk carrier at night.
- A truck driver was opening the liner of his truck and fell back hitting his head and sustaining fatal injuries.
- A linesman was working on a railway crossing where he was fatally struck by a train.
- A self-employed truck driver was fatally run over by a grain truck waiting to unload.



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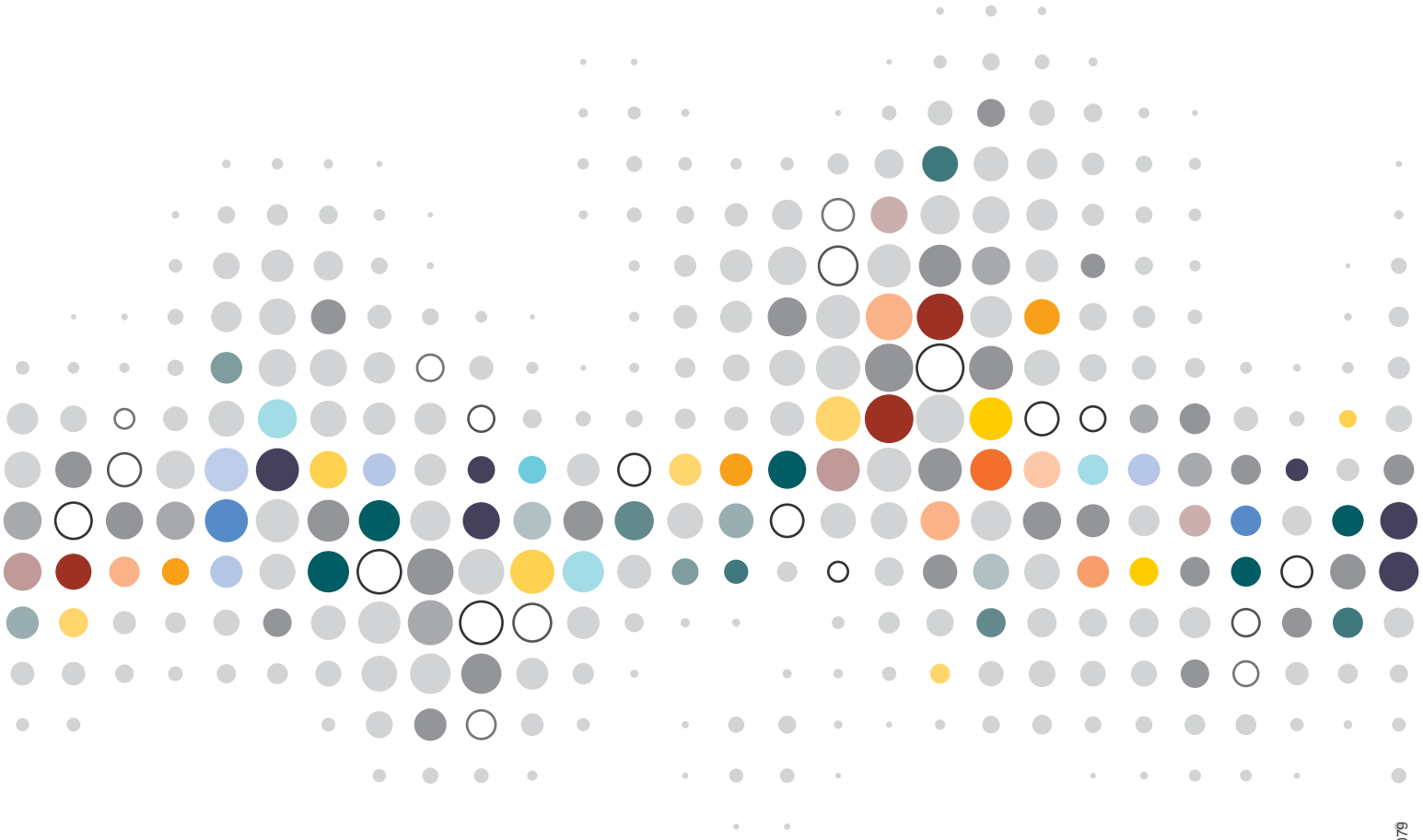

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