# Part B
# Guidelines

# Section 10

# Reducing impacts

## Guideline 27: Environmental considerations

### Background

- For outdoor events, environmental hazards must be considered.
- A variety of people will be attracted to events and many will not be familiar with issues that locally are regarded as common knowledge.
- Common hazards may be mosquitoes, flies, snakes, plants/grasses, hazardous chemical exposure from stored chemicals or chemical sprayed on grass/lawn prior to events.
- Although the weather in Western Australia is reasonably predictable, there are periods of severe conditions.
- Electrical storms and hail whilst rare, do occur and therefore the likelihood must be considered, and appropriate action plans developed. While hailstorms are less likely to occur, it is of note that disasters have occurred when people have sought protection.
- In hot weather, dehydration and sunburn are common issues.
- Prior to the event it is harder to detect hailstorms then electrical storms, however, an emergency management plan should contain a contingency plan for patrons who will seek refuge in the event of a hailstorm
- Although harder to detect than electrical storms, an emergency management plan should contain a contingency for patrons seeking refuge from hailstorms.
- High winds can create dangerous situations at an event and should be monitored at all times.
- For exposed events, shade must be provided to allow some relief from hot sun.

AS/NZS 1768 Lightning Protection recommends that exposed areas are evacuated when the time between lightning and associated thunder is less than 15 seconds.

At 15 seconds the lightning strike is approximately 5 km from the observer.

# Guideline 28: Lightning

## Guidelines

With the current trend for more outdoor events there is an increased threat of lightning effecting events.

In Australia deaths by lightning are considered relatively rare, approximately 5 to 10 deaths per year, but given that there are often large numbers of people in exposed locations, if there were to be a strike within a crowded area the likelihood of multiple deaths and casualties with permanent injuries cannot be ignored.

Plans for electrical storms need to be prepared in advance and not left until a threat is on the horizon.

It is generally recognised that it is not safe on open ground such as a festival site or beneath trees. It is safer within a building or even a vehicle. Preparations for weather events rely on what information is available and how feasible it is to abandon or delay the event until the danger has passed. In addition to a direct strike there may also be devastating effects on anyone near the strike or structure that has been struck.

The Bureau of Meteorology may be available to determine the extent of lightning threats, they can be contacted on (08) 9263 2222.

- AS/NZS 1768 Lightning Protection sets out guidelines for protection of people outdoors and recognises that:
- an approaching thunderstorm is treated as local when the time interval between a lightning flash and hearing the thunder is less than 30 seconds
- when moderate to loud thunder is heard, persons outside should avoid exposed locations and seek adequate shelter if thunder follows within 15 seconds of a lightning flash (corresponding to less than 5 km)
- simple precautions such as earthing prominent structures should be taken if lightning is forecast and once a threat becomes imminent patrons should be moved away from prominent structures and associated metallic components to reduce the risk of an associated electrical shock caused by a rise in potential
- AS 1768 has specific recommendations for large tents and marquees, seating stands and metal scaffold structures.

The following information has been extracted from AS/NZS 1768.

## Large tents and marquees:

Where large temporary structures of this type are used for exhibitions and entertainment involving large numbers of people, consideration should be given to their protection against lightning.

In general, such structures are manufactured from non-metallic materials and the simplest form of protection will usually consist of one or more horizontal air terminals suspended above them and connected solidly to earth.

A non-metallic extension of the vertical supports provided for these structures may, if convenient and practicable, be used for supporting a network of horizontal air terminals but a clearance of not less than 1.5 m should be maintained between the conductor and the fabric of the enclosure.

Down-conductors should be arranged outside the structure away from exits and entrances and be connected to earthing rods that, should be connected to a ring conductor in such a manner as to be inaccessible to the public. Tented structures that have metal framework should have these efficiently bonded to earth at intervals of not more than 20 m of perimeter.

## Small tents:

For small tents, no specific recommendations can be given.


## Metal scaffolding, overbridges and similar structures,

Where metal scaffolding is accessible to the public, particularly when it is erected over and on part of a common thoroughfare or used for public seating, it should be efficiently bonded to earth.

A simple method of bonding these structures consists of running a strip of metal other than aluminium, 20 mm X 3 mm size, underneath and in contact with the base plates carrying the vertical members and providing earthing at intervals not exceeding 20 m.

With public seating accommodation, only the peripheral members of the structure need bonding to earth.

# **Guideline 29:** Noise

## Background

Balancing a need for entertainment with the community's right to enjoy reasonable quiet is a difficult task and noise pollution from concerts has historically been a challenge to manage.

Generally, noise emitted from any premises must comply with the provisions of the *Environmental Protection (Noise) Regulations 1997*. However, regulation 18 allows the CEO of a local government to approve an event if satisfied that its noise emissions would exceed the assigned noise levels; but would lose its character or usefulness if it had to meet the assigned levels.

## Guidelines

## Application for Noise Regulation 18 Exemption

A noise regulation 18 application should be submitted to the local government of the district in which the event is to be held at least 60 days before the event. An application fee is also payable by the applicant to the approving authority.

As a minimum, the application should include details relating to start and finish times, sound level limit calculations, PA system set-up, sound checks, monitoring responsibilities, complaint management and event notification. Noise from stage construction and deconstruction activities before and after the event should also be considered and stipulated in the application.

For major events, the application should also contain noise prediction modelling and a noise management plan.

## Noise prediction modelling

Events that are likely to affect a significant number of neighbouring residents need to be assessed for potential noise impacts. Therefore, noise modelling should be included in the application.

Noise level predictions are commonly performed using computer models but for small scale events 'hand' calculations may be acceptable.

Noise prediction reports should contain the following information:

- venue details
- likely environmental conditions, including prevailing wind conditions
- equipment location and type
- where barriers are positioned for sound attenuation
- proposed sound levels for a worst-case scenario:
    - at the mixing desk
    - the nearest noise sensitive premises
- distance from mixing desk to the stage loudspeakers
- noise modelling or other predictions expressed in graphical detail on a map of the venue and including affected outside areas showing noise level contours at locations in other neighbouring local governments or similar land jurisdictions
- analysis, conclusion and recommendations.

It is common for noise prediction reports and management plans to be submitted to support applications. This information forms the basis upon which an event may be assessed and approved.

## Noise management plan

Noise management plans provide reassurance at an early stage that the event is likely to be well managed.

Noise management plans should consider measures that will reduce the event's noise impact on the community, such as maximum sound levels at the mixing desk and noise sensitive premises.

Outdoor music concerts and festivals need to operate at sound levels of at least 95 dB(A) at the mixing desk to achieve an acceptable atmosphere. The sound mixing operators for many of the artists may wish to operate at higher levels, typically up to 105 dB(A) at the mixing desk. In most cases, this is unnecessary and a limit of 100 dB(A) at the desk is acceptable. Noise levels are measured as 1-minute LAeq (average) sound levels.

For one-off events that the community has been made aware of, the following reactions from residents are likely:

| Residential level | Likely response |
|---|---|
| below 55 dB(A) | Generally, no complaints |
| 55 - 65 dB(A) | Few complaints, increasing in sensitive areas and later hours |
| 65 - 75 dB(A) | Considerable level of complaints, less in tolerant areas |

## Stage and venue design and layout

The natural features of the stage and venue location should be used to reduce the noise exposure of affected occupiers. The stage should be arranged so that:

- the sound is directed away from noise sensitive premises
- flying speakers should point towards the ground
- the distance between the noise source and receiver is as large as possible
- natural or introduced physical or barriers are used to screen any noise.

Heavy duty sheets or drapes deployed to the rear and sides of stages will reduce sound by approximately 10 dB(A). Specialised loudspeaker systems and arrangements, such as line source array speakers or delayed speaker stacks are commonly used.

## Time and duration of the event

Control over the start and finish times and duration of the event will reduce the noise impact on noise sensitive occupiers. Events should generally be held at reasonable hours of the day such as from 9.00 am to 11.00 pm. Event duration should not exceed 6 hours. Sound check, or practice times should also be limited to no more than 1 to 2 hours and not before 9.00 am or after 10.00 pm. Longer event duration and later hours may be acceptable if it is demonstrated the community does not object or specific noise amelioration measures are implemented.

## Sound monitoring and reporting

Those who perform sound monitoring must be approved by the authorising LG's CEO. Acoustic consultants or authorised persons under the Act usually qualify as approved persons to conduct sound monitoring.

Sound monitoring should be performed for the duration of the event and include sound checks at the stage, mixing desk and at least one location outside the venue at a noise sensitive premise. The monitoring should be continuous and recorded and a report submitted to the approving authority approximately 7 days after the event to assess the conditions of the approval were met.

It is common for approving authorities to also conduct random noise monitoring at the mixing desk and outside the venue, including the boundary of neighbouring stakeholders to assess the overall noise impact of the event. Any complaints may be responded to separately or in liaison with stakeholders.

## Community notification

A community notification leaflet should be drafted by the promoter and checked by the approving authority prior to circulation. It should be issued 7 days before the event to give occupiers adequate notice and it should be written clearly and in a positive manner and include:

- venue name and location
- dates
- start and finish times
- contact telephone numbers for complaints or queries during the event
- confirmation of the event approval. This will reassure the public that the event is being managed
- any relevant non-noise related information such as traffic management (temporary road closures), security and public transportation for the event.

An alternative to using leaflets is to notify the public via newspapers or other media as approved by the authority. The use of media may be more appropriate if the area of noise impact is very large.

## Complaint records and response procedures

Event managers must maintain a record of complaints, including the names and addresses of complainants, times, dates and type of complaint. The information should be passed on to others for action and be available at the request of authorised officers. Event management and acoustic consultants responsible for noise management are to be kept informed of all noise complaints.

## Fees and access

- Approving authority fees for event applications vary and noise monitoring fees may also be charged to recover the costs of the approving authority staff attending events.
- Persons authorised under the *Environmental Protection Act 1986* such as Department of Water and Environmental Regulation officers, local government environmental health officers and the Police can monitor, inspect and carry out noise enforcement functions in all public areas of the venue.
- Authorised noise officers' role and access requirements need to be included in event briefings.
- Authorised persons often require access into secured areas for monitoring, e.g. behind stage, side of stage and mixing desk, therefore they should be issued with relevant accreditation before the event.

## Community activities and 'exempt noise'

Noise regulation 16 classifies noise emissions from 'agricultural shows, fairs, fetes, exhibitions and like events' as 'exempt noise' that is not required to meet the assigned noise levels. Other strategies are often used to manage noise from these types of events.

## Support tools

### Noise Regulation 18

For specific details regarding noise regulation 18 please refer to the following website, where a summarised version of the noise regulations can be downloaded: https://www.der.wa.gov.au/your-environment/noise

# **Guideline 30:** Hazardous goods – lasers, pyrotechnics, LPG, flammable liquids

## Background

In Western Australia any laser, regardless of the application must comply with the *Radiation Safety Act 1975* and the Radiation Safety (General) Regulations 1983.

The regulations require compliance with AS/NZS 2211, 'Laser safety'.

Performers must specify if they intend to use lasers and identify the class of laser to be used and confirm that they will operate in accordance with the Radiation Safety Act.

## Guidelines

### Laser Categories:

| Class | Requirements |
|---|---|
| 1 | Labelled – Licensed operator not required |
| 1C | Labelled – Licensed operator not required |
| 1M | Labelled – Licensed operator not required |
| 2 | Labelled – Licensed operator not required |
| 2M | Labelled – Licensed operator not required |
| 3R | Licensed Operator - CASA approval |
| 3B | Licensed Operator - CASA approval |
| 4 | Licensed Operator - CASA approval |

Lasers classified in AS 2211 as Class 3B and Class 4 (lasers with an output power greater than 5 milli-watts, 5mW) must be registered for its place of use.

For one-off events, a *temporary permit* (registration) is required. This covers the equipment for a period of up to 3 months. For periods greater than 3 months a permanent registration is required.

The registrant must appoint a suitably qualified Laser Safety Officer (LSO) who oversees and is responsible for the safe use of the laser (see below for qualification).

A condition for grant of registration is that the Code of practice for the safe use of lasers in the entertainment industry is adhered to (available from the Radiation Health Branch (RHB).

## User licence

- The user must obtain a licence to operate the laser or must operate it under the appropriate supervision of a licensee.
- Licence and LSO applicants must provide proof of competence and experience in using lasers before a licence will be considered. In most cases this requires attendance at a Radiological Council approved laser safety course and a pass in Council's examination. The Radiation Health Branch can provide a list of recognised laser safety courses and examination details for these purposes.
- For a complete guide to licensing and registration of lasers please contact the Radiation Health Branch on 9222 2000 or via email: Radiation.Health@health.wa.gov.au.
- The event manager is responsible for obtaining details of lasers and ensuring that operators have appropriate licenses and required procedures are in place.

## Pyrotechnics

### Background

Pyrotechnic displays have the potential to cause fires and personal injuries to members of the public. They are regulated by the Department of Mines, Industry Regulation and Safety under the *Dangerous Goods Safety (Explosives) Regulations 2007* (the explosives regulations).

Theatrical Fireworks may be used indoors or outdoors and must be operated in accordance with the Safe use of close proximity fireworks in Western Australia.

Outdoor fireworks are only for outdoor use and must be approved in accordance with the Department of Mines and Petroleum Resources Safety's Safe use of outdoor fireworks in Western Australia.

Everyone with access to the fireworks must have a Dangerous Goods Security Card (DGSC).

- If pyrotechnics are planned, an application must be approved by self-certified operators.
- Police and local government must have input into the approval process.
- The use of pyrotechnics and associated hazards must be considered in the risk assessment process and be incorporated into the risk management plan.
- The limiting parameters, wind strength, wind direction, local fire weather warnings and exclusion zones must be clearly defined well in advance of the event.

## Interstate licenses

Interstate theatrical fireworks license holders must apply for a Western Australian license. This process is facilitated by a mutual recognition policy. In most cases, interstate restrictions and endorsements are matched as closely as possible for straightforward issue of the appropriate Western Australian license.

International and interstate operators who do not obtain a Western Australian license must have a Western Australia-licensed operator supervising their activities.

A license is generally required for the storage of explosives. However, the storage of limited quantities of theatrical fireworks by licensed operators is exempt from additional licensing.

## Exempt storage by licensed operators

The holder of a license to use theatrical fireworks does not require an additional license to store explosives for the gross quantities of theatrical fireworks listed in Table 3.1. of the Western Australian Code of Practice Theatrical Fireworks.

### Exempt storage for licensed operators

| Hazard division | Maximum quantity (kg) |
|---|---|
| 1.1 or 1.2 | 2.5 |
| 1.3 | 15 |
| 1.4 | 30 |

Exempt storage must be stored in a container that:

- has a clear visible sign saying 'Explosives'
- is not constructed or lined with a ferrous metal
- can be closed and locked
- protects the explosive from the weather, contamination and sources of ignition
- does not allow the explosive to escape or leak from it
- when locked, prevents removal of or access to the explosive by unauthorised people.

## LPG

- LPG is used for cooking and machine fuels (e.g. fork lifts).
- All gas cooking facilities must comply with the Office of Energy safety guidelines.
- Safe use of gas appliances in public venues.
- LPG for forklifts and the like must be used appropriately and stored in a secure designated location.

## Petrol/diesel fuels

- Petrol and diesel fuels must be stored in secure designated areas.
- Refueling should not take place in enclosed areas or areas occupied by patrons.

# **Guideline 31:** Vehicles and transport

## Guidelines

At events, traffic management should be in accordance with the Main Roads' Proposed Code of Practice for Event Traffic Management (mainroads.wa.gov.au)

There should be adequate parking so that neighbouring properties are not disturbed by vehicles visiting the venue.

It is the event manager's responsibility to liaise with local government to ensure that adequate parking and traffic control measures are in place for all phases of the event – bump in, event, and bump out.

For temporary parking if cars are parked in an orderly manner it is possible to park 350 cars per hectare.

**Example:**

As a guide to how much room may be available, a typical Australian rules football ground has a capacity for approximately 1,000 cars.

Consideration must be given to drop off and pickup points for private vehicles, buses, taxis, charter vehicles and other on-demand operators such as Uber, DiDi and Olacabs.

In the metropolitan area the Taxi Industry Board Uber, Ola, Didi, etc. should be consulted so that they can advise drivers of the preferred arrangements and possible need for temporary taxi ranks and exclusion zones.

## Public transport

- If public transport is available for patrons, the event should endeavour to coincide within transport times of operation. The event manager should avoid mass ingress and egress of patrons during weekday peak hours (6.30 am-9.00 am and 4.00 pm – 6.30 pm).
- The event manager should consider patron transport to and from the venue. In many metropolitan and regional locations Transperth or private bus companies can provide quotes to deliver these services.
- Where events occur during normal transport hours of operation, and public transport is available, Transperth should be advised 9 weeks prior to the event so they can consider modifications to routine services.
- Public transport services should be promoted on advertising material and tickets where possible and where a transport plan has been produced patrons should be encouraged to use the Journey Planner on the Transperth website where appropriate Transperth Journey Planner.
- The cost to provide special event services should be included in the ticket price so that cash fare transactions are eliminated, and the cost is disbursed amongst all the patrons. Contact Transperth to determine how much you should place on the ticket price.
- For rural locations it may be preferable to have patrons camp overnight. If this option is taken, the local government may set additional conditions.

## Further information

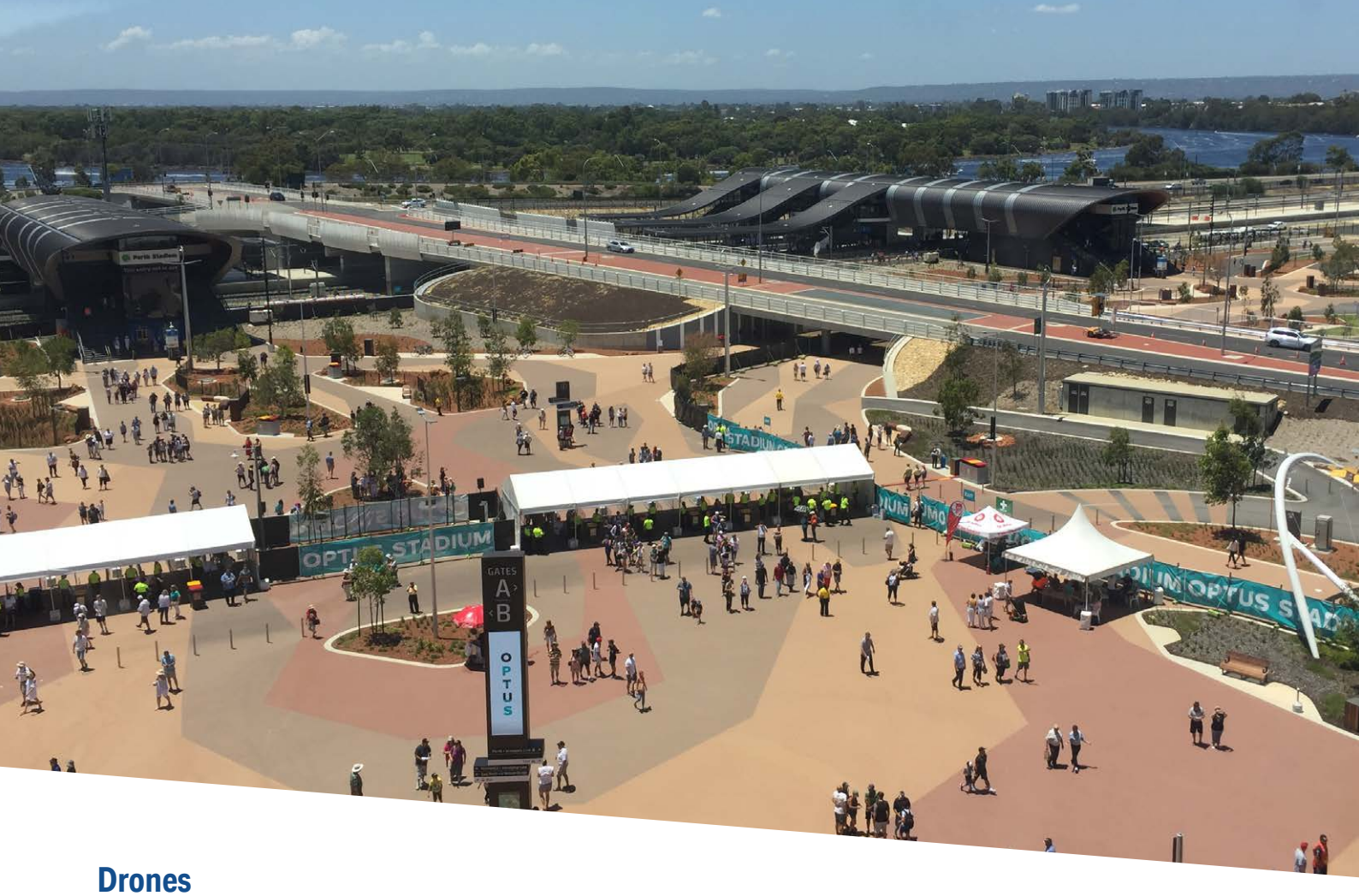
Main Roads WA Code of Practice:
Traffic Management for Events

Metropolitan Transperth inquiries should be directed to:
Public Transport Authority, P.O Box 8125
PERTH BUSINESS CENTRE
PHONE: (08) 9326 2000

Transperth Journey planner

Transperth, Event Notification Form

Transperth Special Events Information




## Drones

The use of drones (or unmanned aerial vehicles – UAVs) is now a significant consideration for events. Their use from a commercial and recreational perspective has grown over the past few years.

The primary legislation for drones comes from the Civil Aviation Safety Authority CASA but local governments may also have local requirements especially on recreational areas under their control.

Legislative requirements can be enforced by police and designated local government officers such as rangers.

## Further information

CASA Drone Requirements

# **Guideline 32:** Clean-up and rubbish removal

## Guidelines

- Rubbish collection and removal is an important issue.
- Recycling should always be considered. See the support tools section for the recycling guidelines and checklist that have been developed by Keep Australia Beautiful WA and the Department of Water and Environmental Regulation.
- Care needs to be taken to ensure that receptacles used to dispose of rubbish do not represent a hazard by becoming viewing platforms or dance podiums.
- Bins must be emptied throughout the event.
- Collection of food waste and packaging is a considerable issue for prolonged events.
- The general clean-up inside and outside the venue must be completed as quickly as possible after the event by the promoter. External queuing and heavy pedestrian routes should be kept clear of debris and potential missiles such as bottles and cans throughout the event.
- Areas outside the venue should be cleaned prior to the usual start of business the following day.

## Support tools

- WA Waste Wise Event Guide – A guide to recycling at public events in Western Australia.

## References


- Environmental Protection (Noise) Regulations 1997, Government of Western Australia.
- *Radiation Safety Act 1999*, Government of Western Australia.
- Standards Australia Limited 2007, Standard AS 2211, "Safety of laser products". Retrieved June 11, 2008, from AS/NZS 2211 Safety of Laser Products
- National Health and Medical Research Council 2005, *Code of practice for the safe use of lasers in the entertainment industry*. Retrieved June 11, 2008, from http://www.arpansa.gov.au/pubs/rhs/rhs37.pdf
- Main Roads Western Australia, July 2015, Code of Practice for Events. Traffic Management for Events
- Transperth Western Australia
- Transperth Journey planner
- Transperth, Event Notification Form
- Transperth Special Events Information