



NSW Police Force - Submission Response

North Byron Parklands State Significant Development Application

Commercial in Confidence

June 2018



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1. Background

In March 2018 the NSW Police lodged a submission to the North Byron Parklands State Significant Development Application which was placed on public exhibition between December 2017 and February 2018. The primary concerns raised in the submission include:

- Impact on Tweed/Byron Police District Resources;
- Crowd Crush;
- Traffic;
- Drugs; and
- Safety.

A meeting was held with Senior Tweed/Byron Police, Splendour in the Grass (Splendour) and Falls Festival Byron (Falls) event producers and North Byron Parklands (Parklands) on Thursday 12 April 2018 where it was agreed that the venue and events would provide a detailed response to each of these issues.

The aim of this report is to provide additional information to NSW Police to demonstrate that future events (including the proposed incremental increases in event capacity for Splendour) can be safely and effectively managed.

A response to each of the issues raised in the NSW Police submission is provided below. Police's comments are included in italics for reference.

2. Impact on Tweed/Byron Police District Resources

The Tweed/Byron Police District does not have adequate permanent staffing resources to cater for the larger festivals. Additional officers are sourced from a variety of sources including:

- (a) Statewide specialist and general policing resources.*
- (b) User Pays*
- (c) Regular Rostered officers*
- (d) Overtime*

Only limited number of Tweed Byron police can be utilised for User Pays due to local policing commitments and events commitments. The User Pay officers need to be attracted from other police districts and accommodation and associated travel costs can result in difficulties in attracting officers. In addition, the new year period is a busy time state wide for the NSWPF and there is often an organisation wide moratorium on leave. During this period we have already had difficulties in attracting User Pay officers for the Splendour in the Grass Festival.

Any increase in crowd numbers, resulting in increased policing demands, would prove very difficult to resource. The unique problem with policing events on a user pays basis in the Tweed Byron PD is that sourcing of user pays police is particularly difficult due to the financial advantage Sydney based events have over Tweed Byron PD. Police attending Sydney based user pays events do not have to pay for travel and accommodation unlike Tweed Byron PD. Tweed Byron PD relies heavily on police from Sydney for user pays.

It should also be noted that rostering to accommodate the needs of a large festival at current has impacts on the Tweed Byron roster for almost 6 months of the year. This has a direct impact on the ability of the command to provide service to the local community. In addition, during the festival periods the Tweed/Byron Police District has already been short staffed and unable to sufficiently respond to the safety needs of the local community. This continues to remain a concern.

2.1 Existing Resourcing Arrangements

Splendour has a long history working with the NSW Police Tweed Local Area Command. The inaugural Splendour in the Grass was held in 2001 at Belongil Fields and was a sold out single day camping event with 12,500 patrons. Over the following 9 years the event grew to a 2-day camping event with 17,500 patrons. Police attended these events in a supporting capacity with the majority of Police resources focused on Byron Township and the surrounding community. The user-pay bill was approximately \$20,000 per annum.

In 2007, Splendour and a number of other local shareholders purchased the North Byron Parklands site in Yelgun with the intention to develop a purpose built outdoor venue and relocate the event away from the traffic pressures placed on the Byron township and its residents. Parklands is located in a low density rural area in the north of the Shire, has excellent road access and significant buffers to local residents.

During the extended approvals process for the venue, Splendour was required to temporarily relocate to the Woodford Folk Festival venue in Queensland where the festival grew to a 3-day camping event with 32,000 patrons. The Queensland Police LAC were concerned about a new festival located in their catchment which they had no prior experience with. As a result, Queensland Police insisted on taking a key organisational role with the festival, which in turn resulted in a significant increase in resources and a subsequent user-pay bill increasing from \$20,000 (in Byron) to \$120,000 (in Queensland).

After 2 years at the Woodford Folk Festival venue the event returned to Belongil Fields. Under a new LAC in Tweed, Commander Stuart Wilkins, in consultation with Queensland Police, adopted the Queensland model which included user-pay levels greater than \$100,000 per event and a range of other licensing changes not previously encountered.

Splendour is now paying in excess of \$200,000 per event for Police user-pay services and has only just secured approval for a capacity of 35,000 patrons for Splendour 2018.

Splendour understands that one of the key reasons for the increased police resourcing numbers at the festivals (and hence the increased user-pays fee and increased impact on Police LAC resources), is this shift from Police having a 'support' role to a more 'organisational' role in recent years. This is despite the events having their own industry best practice security management systems, and considerable security resources which include the following staff for the Splendour 2017 event:

• Internal Security	262
• Camping Security	44
• External Security	23
• Transport Security	21
• Car Park Security	4
• Event Control Centre Security	5
• Specialist Crowd Control Security	2
Total	372

Whilst Splendour fully acknowledges and respects that it is up to the NSW Police to determine its resourcing requirements for events at Parklands, it also notes that the Police resourcing for Splendour is considerably more than that experienced for other events in Australia.

Some examples of contemporary events in Australia are outlined in Table 1 below.

Table 1: Police and Security Resourcing for Contemporary Events

FESTIVAL	LOCATION	PATRONS	POLICE NUMBERS	SECURITY PERSONNEL	POLICE CHARGE
Download Festival	Flemington, Vic	25,000	24	230	\$23,000
Falls Festival	Lorne, Vic	16,500	8	137	\$20,000
Falls Festival	Marion Bay, Tas	16,000	14	98	no charge
Falls Festival	Fremantle, WA	16,500	0	205	no charge
Splendour 2017	Parklands, NSW	32,500	63	372	\$202,715

The support model employed at Splendour while located at Belongil Fields is also used for many major events held in other parts of the world, including the Glastonbury Festival in the UK which has a capacity of some 150,000 patrons. Splendour believes that the adoption of such a model has the potential to significantly reduce the impact on police resources for events at Parklands. It also notes that the public safety liability for events at Parklands rests with the event organisers.

2.2 Proposed Resourcing Arrangements

In response to Police concerns around their ability to provide adequate levels of user-pay Police for events held at Parklands, it is understood that the Tweed/Byron Police District does not have the resources to sufficiently respond to the safety needs of the local community and also provide comfortable levels of representation at events from their year-round team.

It is also understood when requesting user-pay Police from outside the Police District, the organisation does not offer accommodation to officers, which in turn can act as a deterrent for those interested in undertaking the work.

To address this issue, in consultation with Tweed LAC Parklands is willing to offer one of the following options to support the recruitment of user-pay services:

1. Offsite hotel accommodation

- Events to provide hotel style accommodation for user-pay Police for the duration of their duty; and
- Events to provide Police with a shuttle bus service to and from Parklands to support the Police shifts.

2. Onsite camping accommodation

- Events to provide an operational camping set-up onsite at Parklands. This could comprise of tent or dormitory style accommodation with beds, linen, blankets etc. It would also consist of showers, toilets, kitchen and rest area.

3. Offsite camping accommodation

- Events to provide an operational camping set-up at Mullumbimby Showgrounds (or similar offsite location). This could comprise of tent or dormitory style accommodation with beds, linen, blankets etc. It would also consist of showers, toilets, kitchen and rest area.
- Events to provide Police with a shuttle bus service to and from Parklands to support the Police shifts.

Splendour is also committed to working closely with Police to further investigate optimal police resourcing requirements for festivals at Parklands, based on its security management systems and lessons learned from contemporary festivals.

3. Crowd Crush

Police hold grave concerns about crowd surge and crush within the amphitheatre should an unexpected event occur causing an uncontrollable crowd response. The applicant has indicated to police that the amphitheatre is capable of holding 40 000 people. Police are of the belief that such a crowd would present extreme risk and request that the applicant document in detail how numbers to this area will be monitored, limited and managed to prevent a crowd crush incident from eventuating.

The experience in Victoria at the annual Falls Festival at Lorne in 2016 where crowd crush resulted in multiple casualties shows that mass crowd movement in confined areas is difficult to manage. This aspect of the proposal needs to be detailed in any event planning. The manner in which a crowd of 40,000 is managed should (for instance a flare or similar start a mass crowd movement) need to be detailed. That is clear instructions need to be given to the crowd from organisers prior to anything happening. Those instructions need to be supported by plans that can be implemented in short time.

3.1 Existing Crowd Management Systems

Currently in Australia there are no Australian standards or specific legislation with regard to crowd management. In most cases, reference is sought from Europe and the United Kingdom.

Local authorities in various states across Australia have endeavoured to compile best practice guidance and again, these documents invariably refer back to the standards/guidance documentation found in the UK and Europe.

Events at Parklands utilise leading crowd management practitioners Secure Events and Assets (SEAA), headed up by Jim Fidler and Robbie Nash, to undertake detailed crowd assessments and crowd safety management plans covering main stages at both Splendour and Falls. These assessments have taken place at Parklands since 2016.

Parklands also recently engaged SEAA to prepare a crowd assessment report (refer Appendix A) for proposed events to be held at the venue as part of the current development application. This report provides a detailed assessment of patron capacities within the amphitheatre, and crowd management risks associated with the proposed events.

Jim Fidler has 30 years' collective service between Metropolitan Police (Public Order Unit) London and commercial security in the United Kingdom, Europe and Australia. He provides specialist security and crowd management consultancy services for major events and festivals globally. Jim is currently the only licensed Security Consultant in Australasia to possess a formal crowd management qualification.

Jim is also an Accredited Venue Manager through the Venue Managers Association and a Specialist Member of the International Institute of Risk and Safety Management.

Robbie Naish has over 20 years' experience in the events industry. He is responsible for the planning and execution of complex crowd management plans, which has included the 2014 Tour de France, all road events at the 2014 Commonwealth games and the Queens Royal Pageant in central London. Robbie was also the lead crowd manager for some of the UKs biggest music events that include the Glastonbury Festival (150,000 patrons), V Festival (90,000 patrons), IOW Festival (80,000 patrons) and the Boomtown Festival (60,000 patrons).

The crowd assessment process used by SEAA is based on the methodology established by Prof Keith Still (Still, 2014) and often referred to as '**DIM ICE**'.¹

¹ Other alternatives are available such as Force Information Space Time (**FIST**) (Fruin, 1993) or Arrival Ingress Movement Egress Dispersal (**AIMED**) (Sports Ground Safety Authority, 2015).

The DIM-ICE model implies that there are *three main influences* on crowd behaviour (design, information and management) and *three main phases* of crowd behaviour (ingress, circulation and egress). These are outlined in more detail in Appendix A.

By modelling these aspects, events can highlight where in the phases and influences the risks are:

- High (improvement needed);
- Medium (monitoring needed); and
- Low (operating efficiently).

For events held at Parklands, once management measures and mitigation practices are consulted with members of the Safety Working Committee, the agreed measures are documented in the event's crowd management plan.

The crowd management plan for each event is implemented by SEAA and key security managers and team leaders responsible for overseeing staging areas such as the amphitheatre.

The crowd assessment and management plans in turn form part of the wider Event Management Plan.

Central to the management of hazards and risks during events is Parklands' and the event organisers' Incident Command and Control System (ICCS), which is coordinated through the Event Control Centre (ECC). The ICCS is outlined in more detail in Section 6 below, and in Appendix A.

3.2 Proposed Crowd Management Systems

The SEAA report (Appendix A) applies crowd capacity methodologies used in the UK and Europe and provides a number of recommendations required for each patron capacity increase proposed in the Parklands EIS as listed below:

- 35,000;
- 42,500; and
- 50,000.

The report also addresses potential crowd crush and crowd surge scenarios and provides details of a management regime covering:

- Monitoring;
- Limiting; and
- Managing crowds.

The assessment provides the following key recommendations for each event size:

35,000 Patrons – Amphitheatre (refer Appendix B):

1. Define trigger points for closures/redirection;
2. Dedicated Amphitheatre Manager is provided for the duration of the event that is experienced with managing crowded places;
3. Additional security resources allocated for the amphitheatre specifically;
4. CCTV available for the event that allows for a holistic view of the stage/amphitheatre to monitor crowd movement towards (or in some cases away from the amphitheatre/amphitheatre);
5. Event Control Centre.
6. Additional manpower resources allocated for the amphitheatre and to be reassessed continually based on the RAG document;

7. Engagement of qualified Crowd Managers who hold formal qualification and operational experience in managing crowded places. Trained Crowd Managers;
8. Extensive security engaged for the event to monitor public order and anti-social behaviour;
9. BLUE gate to be implemented and located Stage Right running alongside the stage - this Gate is an EXIT ONLY and will be used at the end of any act that the amphitheatre manager deems necessary. This gate will allow for emergency services direct access into the front of stage area if needed;
10. YELLOW gate located Stage Left with an increased width allowing for greater egress capacity - this gate is only to be used in case of emergency;
11. Stage screens that have the ability to display predetermined messaging which can display egress routes and other communications;
12. Ability to provide social media messaging;
13. Show stop procedure in place which allows for the following:
 - Direct access to Stage PA system;
 - Access to available lighting in the amphitheatre; and
 - Direct messaging to the audience.

42,500 Patrons – Amphitheatre (refer Appendix C):

All controls listed for the 35,000 patron event plus:

1. Mainstage to be moved back to increase the capacity of the flat hardstand area; and
2. A new pathway (pink) to be introduced – refer Appendix A).

50,000 Patrons:

1. All controls listed for the 42,500 patron event plus a further relocation of the mainstage to increase the capacity of the flat hardstand area; or
2. Relocating the mainstage to the Mix Up oval (or similar flat land within the event area should the performance of the amphitheatre with 42,500 patrons not meet required safety performance measures).

3.3 Lorne Crowd Crush Issue

It is worth noting the very different festival formats and topography of each event. Falls Lorne is a significantly smaller show at 16,500 patrons operating in one space (Main Arena) with 2 featured stages, one of which was at the rear top of the venue and the other at the bottom. On the day of the incident at Lorne (30 December 2016) both the stages were operational meaning most patrons were within the main stage area.

For Splendour, all four featured stages are in operation during the event plus approximately 20 other event spaces such as the double storey Smirnoff Cocktail Bar, The Global Village, The Tipi Forest, Splendour in the Craft, The Forum and destination bars, which result in the dispersal of significant numbers of patrons across the event area.

This dispersion is further managed by purposefully analysing artists (based on popularity, music, type, likely crowd response, etc) and programming differing genre headline acts between the amphitheatre stage and various stages to make sure no act has will host the full festival audience.

Parklands has also implemented a range of egress/ingress improvements in the amphitheatre in consultation with agencies including the NSW Police including sealing walkways ways, providing barrier fencing along walkways to guide patrons throughout the amphitheatre. Lighting has also been increased using lanterns along all pathways to improve visibility for patrons.

The development of the crowd management plan and the assessment of crowd flows based on a combination of artist profiles, stage constraints and scheduling of acts has provided a greater level of insight and management of patrons utilising these areas.

As always, events aspire to continuously refine their processes. The Lorne venue has made a range of improvements that support the particular characteristics of that venue and the Falls Festival presentation.

With regard to the 2016 incident, Worksafe Victoria conducted an investigation into the matter and in October 2017 determined there was insufficient evidence to establish any offences by the Promoter or its directors and that they would not take any further action.

4. Traffic

The increased traffic volume as a result of increased numbers at the proposed larger festivals will place enormous strain on Tweed Valley Way between Yelgun and Mooball. In previous years this has led to significant delays on Pottsville Rd, Pottsville. Pottsville Road, is classified as a secondary road and is a vital transport link for the local community.

The Tweed Valley Way is a detour route in case of a major incident on the M1 Motorway. The additional traffic already using this road to access the festival particularly during bump in and bump out, would essentially bring all traffic both north and south to a standstill. This could potentially lead to catastrophic outcomes in an emergency evacuation situation.

Increased congestion with both vehicles and illegal camping within the Yelgun rest area causes issues with general motorists not able to access the rest area. This then forces motorists to continue on past that rest area with the possibility of a fatigue related crash.

4.1 Existing Traffic Management

Traffic management for events is undertaken as part of an approved Transport Management Plan (TMP) and Traffic Control Plan (TCP). Plans are prepared by a suitably qualified and Roads and Maritime Services (RMS) accredited Work Site Traffic Controller and are then sent to the Local Traffic Committee comprising representatives from a number of agencies including Tweed and Byron Shire Councils, RMS and NSW Police. The Local Traffic Committee is responsible for endorsing the TMP and TCP with Byron Shire Council responsible for approving the endorsed TCP.

Approved TMPs include a list of emergency contact details as well as a chain of command for managing traffic related incidents. Real time incident monitoring is undertaken by a number of "offsite" event staff and contractors including:

- Event Traffic Controllers - situated on Tweed Valley Way (TVW) and the Yelgun Interchange;
- Traffic Engineer – responsible for implementing the traffic monitoring program which involves road surveillance of the Pacific Highway, Brunswick Valley Way, TVW, Wooyung Road and the coast road to Pottsville;

- Community Manager – responsible for visiting residents in a 3-4km radius of the venue through the entirety of the event; and
- In-front security personnel who patrol TVW, Wooyung Road, Jones Road and the Yelgun Rest Area.

Each of these staff and contractors are required to report any traffic incidents to the Event Control Centre (ECC) who will then respond to the incident by contacting the necessary agency or authority. The NSW MyRoadInfo website is also constantly monitored by the ECC regarding potential traffic incidents and congestion to and from the venue.

NSW Police also play an important role in traffic incident identification as part of their programmed highway patrol presence in and around the venue during event days. Regarding the Yelgun Rest Area, it is recognised that there is the potential for event patrons to utilise this area as a campsite or day parking area. It is also noted that camping activities occur at this location throughout the year (refer **Figures 1 and 2** below).



Figure 1: Yelgun Rest Area 28th May 2018, 8.35am.



Figure 2: Yelgun Rest Area 5th June 2018, 8.32am.

Events actively discourage patrons using this area through the use of signage to request that vehicles drop off and pick up patrons onsite at the event itself. The events also provide two security personnel between the hours of 10am and 1am, whose role is to encourage any motorists who appear to be festival patrons, to leave the rest area and drive to the site to park or drop off passengers. In the instance of patrons ignoring these requests, security report the incident to the Event Control Centre to log the issue. While the festival has no jurisdiction in this location to enforce parking and camping rules it will liaise with the RMS to consider issuing relevant infringement notices. Signage at the entry to the rest area will be in place to reinforce this message.

4.2 Proposed Additional Traffic Mitigation Measures

To address the concerns raised by NSW Police, the following additional measures are proposed to manage traffic issues associated with the proposed development:

1. Council Rangers would be engaged on a user-paid capacity to issue any relevant parking and traffic infringements throughout the event. This presence should increase traffic compliance around the venue locality including the Yelgun Rest Area;
2. Additional light towers would be located along TVW and security guards stationed each night at locations depicted in **Figure 3** to improve safety and monitor pedestrian traffic between the site and the rest area;
3. Additional signage would be installed at main exits as well as security located at these points to discourage pedestrians leaving the site by foot;
4. Use of the Yelgun Rest Area as a last resort alternative pick up zone option should an event experience a significant internal traffic failure which results in onsite traffic congestion. Patrons could be notified by way of social media and event apps;
5. Continue to partner with NSW Police to enforce no stopping zones around the venue; and
6. Engage a suitably qualified tow truck operator for the duration of the event to rapidly respond to any traffic incidents or collisions around the venue locality.

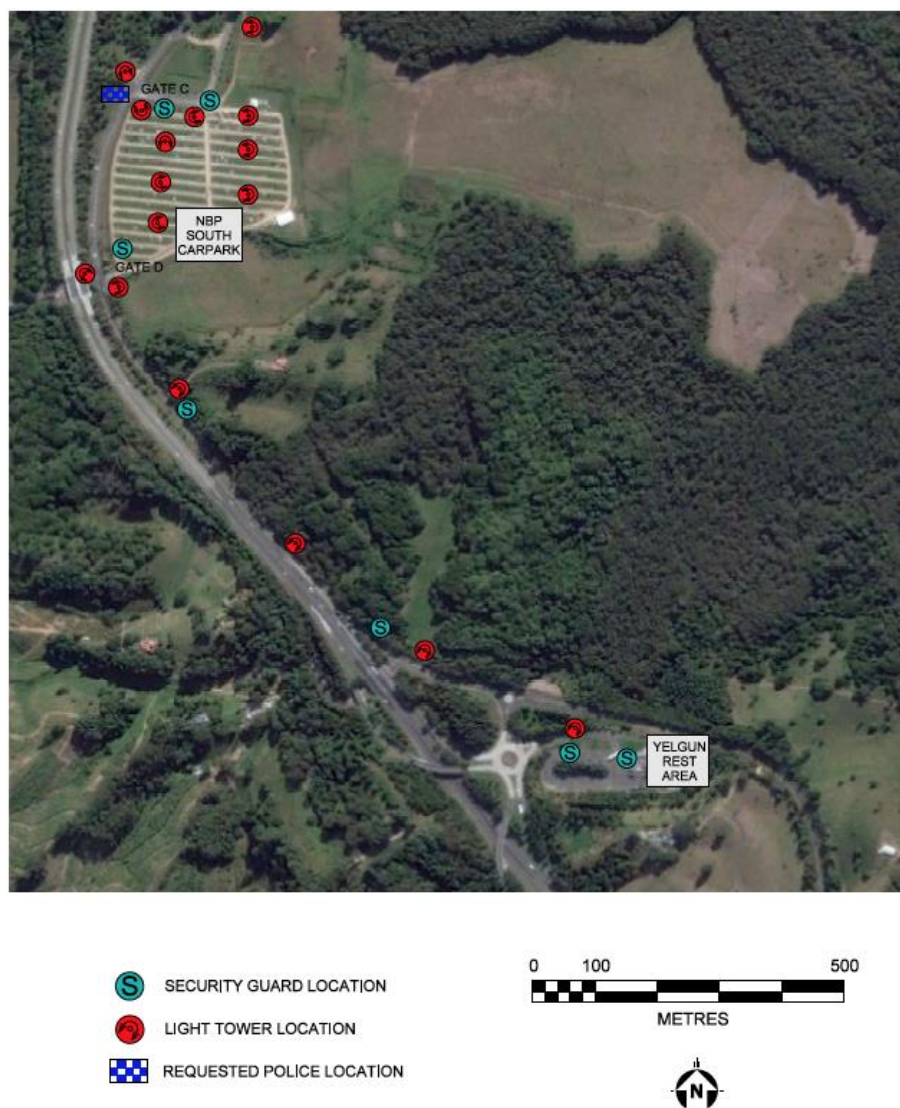


Figure 3: Additional Security Guard and Lighting Tower Locations

5. Drugs

In relation to the use of illicit drugs, seizures by police over a number of years indicate that drug use at the music festivals held at this site is rampant. Despite warnings, and drug detection operations, the seizures by police are significant. In 2015 police made 195 seizures, in 2016 they made 335 seizures and in 2017 they made 295 seizures which included 11 supply prohibited drug matters. It is worth noting that the drug detection operations only operate on a limited basis during the festivals. Even with the current numbers, resources inclusive of police and drug detection dogs are unable to cover the entire time the festival is open to patrons including a number of days. Expansion of the festival will multiply this issue.

As was seen in Melbourne on the 18 February 2017, where 21 people who attended the Electric Parade Music Festival were hospitalised as a result of overdosing on an illicit drug. This was despite organisers having a zero-tolerance policy where patrons detected were to be ejected and not allowed to return. Apart from the potential life-threatening capabilities of illicit drug overdose, the hospitals and ambulance facilities in the Tweed Byron area would not be able to cope with such an influx of casualties.

5.1 Existing Drug Policies

Parklands and both festivals recognise the importance of operating safe events through the active discouragement of illicit drugs at these events. However, it must also be acknowledged that drug use in Australia is a societal issue which pervades all aspects of the community. Illicit drugs are not an issue that is just specific to Parklands or the proposed development.

Splendour in the Grass and Falls Festival Byron work closely with NSW Police to reinforce both event's 'Zero Tolerance' drug policy. Measures implemented by the events in conjunction with the NSW Police include;

- Drug dog detections – Located outside of the event area (i.e. main gates). The process involves the following:
 - Police make a positive drug detection and implement their apprehension and booking procedures;
 - Police determine if the quantity seized is of a “personal use” or “supply” quantity;
 - Persons caught with a “supply” quantity are refused entry to the event, their ticket is cancelled and are subject to Police charges and prosecution; and
 - Persons caught with a “personal use” quantity are processed by Police and allowed entry to the event;
- Vehicle searches – Police have a presence at the main vehicle entry points to the campgrounds precinct. This is supported by event security vehicle searches at campground vehicle entry points;
- Bag searches – Full bag searches are conducted at all entry points to the event, including entry points between the campgrounds and the event; and
- Communication with patrons – illicit drug use is actively discouraged through a range of communication channels including event websites and social media platforms. Patrons are advised that illicit drugs are not permitted onsite and offenders will be handed to Police.

Further measures to address drugs and alcohol use/misuse are outlined in Section 6.12 of the EIS for the proposed development.

5.2 Wristband Procedures

All attendees at both Splendour in the Grass and Falls Festival Byron must wear an event wristband for the duration of their stay at the festival. Wristbands are fitted to patrons upon arrival at the festival in exchange for the patron's ticket.

In the first instance, wristbands are used to denote those who are properly entitled to be at the festival. Equally, they are also utilised for liquor licensing purposes to differentiate between minors and those aged 18 and over, with the latter entitled to consume alcohol and enter various licensed bar areas on site.

Wristbands also act as pass-outs for those wishing to come and go from the event and for re-entry into the festival each day of the festival (i.e. for 3 day ticketholders).

Patrons' wristbands are re-checked each time they re-enter the festival and also checked randomly throughout the festival. Any patrons wearing wristbands that appear to have been broken and re-applied, stretched or otherwise tampered with will be questioned to verify that they are a legitimate ticketholder.

All patron event wristbands are woven fabric wristbands with a tamper proof toggle and include the following accreditation types:

- 3 Day General Admission Over 18's;
- 3 Day General Admission Under 18's;
- Friday General Admission Over 18's;
- Friday General Admission Under 18's;
- Saturday General Admission Over 18's;
- Saturday General Admission Under 18's; and
- Camping.

5.3 Medical Resources

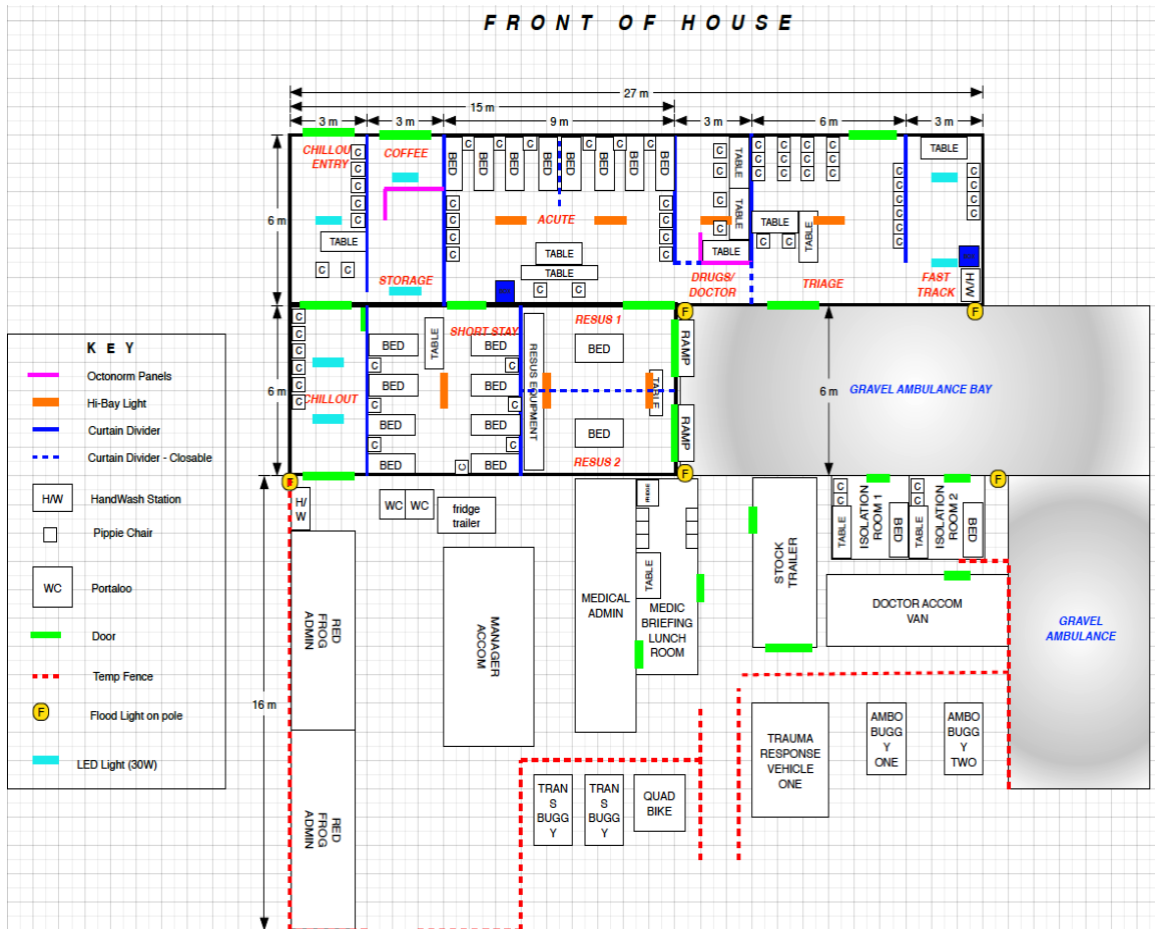
Emergency Medics have been contracted to manage the medical services at Splendour in the Grass since 2008 and has also been the medical service provider for Falls Festival Byron since its inception at Parklands in 2013.

In consultation with the Ambulance Service of NSW and other health care providers, Emergency Medics ensure that each festival has a diligent standard of care and that all areas of potential risk, including management of drug affected patrons, is planned for and managed according to strict guidelines. As the onsite service provider, Emergency Medics provides a level of clinical practice and patient safety that exceeds the level of clinical care that the Ambulance Service would be able to provide at events. Patrons attending festivals at Parklands have 24-hour access to a fully equipped and staffed Medical Centre (refer to Figure 4 below). As part of the ongoing service delivery the following medical resources are made available:

- Senior Emergency Registrar (Doctor);
- General Practice Specialist;
- Critical Care Paramedic;
- 4 x Registered Nurses;
- 9 x Advanced Care Paramedics;
- 12 x Standard Care Paramedics; and
- 50 x Crowd Care Support Officers.

The level of service delivery onsite enables a standard of care for any medical condition that is comparable to, or of a higher level than the resources available from an ambulance service provider. The capacity to manage complex conditions on site without the immediate requirement for transportation to other health care facilities ensures that patrons receive an appropriate care without the necessity of attending local medical facilities unless absolutely necessary. The events boost the capabilities of Ambulance Service of NSW by paying \$5,000 per event for additional crews to be rostered on. These crews are not located at the event, rather they are located at their normal ambulance station (i.e. Byron Bay) and will only undertake patient transfers from events to hospital when requested to. Typical medical services layout at events is shown in **Figure 4**.

Figure 4: Typical Medical Centre Layout at Splendour and Falls Festival



Given the high level of onsite medical facilities at each event, patients can be maintained at the triage centre until ambulance resources are available (even taking into account the extra crew paid for by events).

This provision of onsite services helps to decrease any resource drain on local ambulance networks. In addition to the medical service provisions listed above, each event is required to develop and implement a medical management plan that covers the following requirements:

- Develop a medical plan which details roles and responsibilities of all stakeholders should an incident occur. This plan must also include strategies to manage potential major incidents;
- The plan should detail the levels of care required to effectively manage situations which may arise from the different phases of the event, i.e. 'bump in', event, camping and 'bump out' and consider the recommended first aid posts and personnel;

- The plan must ensure adequate equipment and stock is available and include strategies to access additional equipment should there be an extreme call on services;
- Access routes for ambulance vehicles are required, as is the ability to restrict all other traffic from the roadway should emergency ambulance movement be required;
- A dedicated helipad is required to ensure evacuation of critical patients;
- Take preventative measures to avoid accident or illness through patron messaging to wear adequate footwear, drink sufficient water and be prepared for climatic conditions such as sun exposure and weather protection;
- Contract experienced health care providers to establish and run the medical facilities to reduce the impact on local health services;
- Consult with relevant hospitals, ambulance service and health department prior to the event;
- Designate medical service points and include these on all maps and plans; and
- Provision of onsite ambulance services, where appropriate.

5.4 Proposed Drug Mitigation Measures

Previously located outside of the event area (i.e. main gates), from Splendour in the Grass 2018 onwards Police will now perform Drug Dog operations from within the event's licenced area. In discussion with Event Promoters, this change will allow Police to remove persons caught in possession of drugs from the licenced area and event. The process now involves the following:

- Police make a positive drug detection and implement their apprehension and booking procedures;
- Police determine if the quantity seized is of a "personal use" or "supply" quantity;
- If the quantity is for "personal use", after processing, Police hand the person over to event security;
- Event security remove the person's wristband and cancel their event ticket for the day that the detection has occurred;
- Event security escorts the person from a processing tent off the licenced premises; and
- Persons caught with a "supply" quantity are refused entry to the event (across all days) and are subject to Police charges and prosecution.

6. Safety

6.1 Police Issue

The risks to personal safety of patrons from mass levels of alcohol and drug intoxication are currently at high levels. The increase in numbers attending the music festivals again multiplies this effect. The concern police have is that if there is a mass evacuation or even a crowd crush situation that the levels of patron intoxication will exacerbate the levels of harm.

6.2 Existing Safety Measures

Incident Command and Control System

Event patron safety is paramount for Parklands and the event organisers.

Central to the management of hazards and risks during events is the Incident Command and Control System (ICCS), which is coordinated through the Event Control Centre (ECC). The ECC is located within the event area for each medium and large outdoor event, operates 24 hours a day and is managed by specialist event security management and medical personnel, together with lead agencies which may include NSW Police, RFS and NSW Ambulance. A flowchart showing the main components of the ICCS is shown on the following page in **Figure 5**.

The ECC comprises a coordinator, internal event security manager, external event security manager and campground manager, along with a number of area managers and crew within each of these 3 functional management areas.

Each of the functional areas coordinate with support staff including:

- medical practitioners;
- internal and external security;
- operations response staff;
- venue management staff;
- campground managers; and
- traffic and car park managers.

All incidents are tracked and coded by incident type using a proprietary software, including:

- fire/smoke;
- medical emergency;
- bomb threat;
- infrastructure/internal emergency;
- personal threat and illegal occupancy;
- external emergency; and
- evacuation.

Lead agencies monitor all ECC operations and incidents, and generally each have a mobile command centre located within the event area adjacent to the ECC. Where required, lead agencies are requested to provide assistance to identified incidents. Examples may include:

- | | | |
|-----------------------------|-----------------------------|---------------------------------------|
| • NSW Police: | • Rural Fire Service: | • NSW Ambulance: |
| ○ intoxication; | ○ gas cylinder explosion; | ○ suspected spinal injury; |
| ○ antisocial behaviour; and | ○ individual tent fire; and | ○ cardiac arrest; and |
| ○ trespass. | ○ localised brush fire. | ○ crowd injuries or disease outbreak. |

In the event that an incident is declared critical, the applicable lead agency will take control and coordinate the response in consultation with the event controller, other lead agencies and emergency services. A critical incident response room is located adjacent to the ECC for the coordination of critical incidents.

INCIDENT COMMAND AND CONTROL STRUCTURE

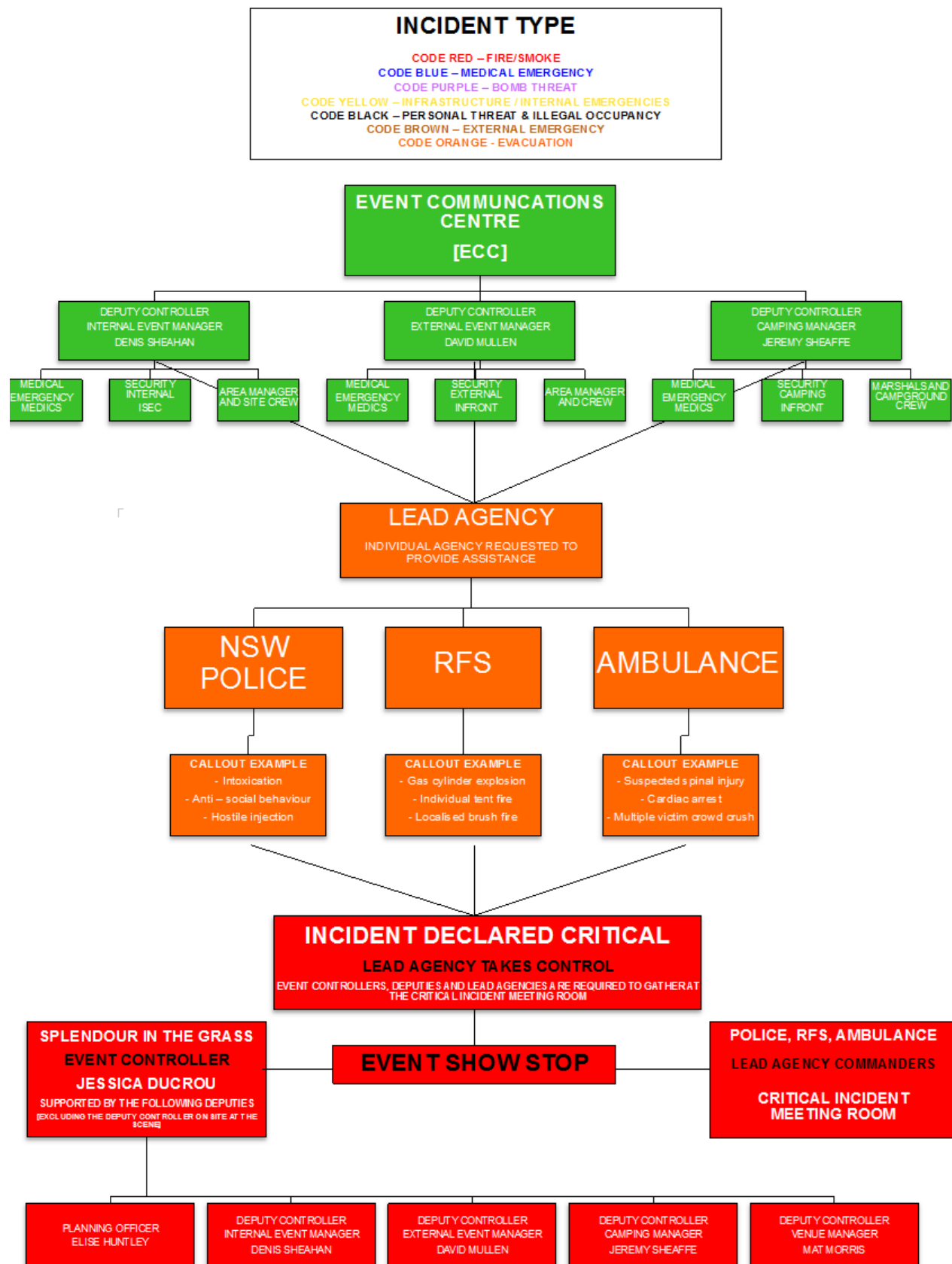


Figure 5: Incident Command and Control Structure.

Other Measures

Parklands and the event organisers implement a large range of other measures to protect patrons from safety related risks. Measures include:

- Internal and external event security personnel;
- Specialised crowd management security teams;
- Patron Safety Hotline available to patrons 24 hours a day during the event;
- the ECC is manned by trained personnel who receive Patron Safety Hotline calls and deploy appropriate resources to assist and support;
- Chronosoft incident tracking, response and communication tool;
- CCTV cameras throughout parts of the event;
- Use of drones for aerial surveillance;
- Implementation of responsible service of alcohol;
- Drug detection programs (via NSW Police);
- Strategic site layout and lighting to improve patron flow and safety; and
- Consideration of patron intoxication in applicable management plans (such as the Flood Risk Management Plan and Bushfire Emergency Evacuation Plan).

In recent years, events have introduced a dedicated “crowd management team” as a result of recommendations from each event’s Safety Management Committee. This team is headed up by a specialised expert in crowd safety, supported by a number of event security personnel with specific crowd management skillsets.

The purpose of this team is to:

1. Conduct a risk assessment of artists and stages to determine aspects such as popularity, crowd demographics (for that artist) and site constraints;
2. Fine tune artist playing times to reduce unpredictable crowd flows and movements between stages and other event areas;
3. Monitor crowd flows and densities during performances to maintain safe parameters for patrons; and
4. Implement “stop show” procedures and/or evacuation procedures in the event of an incident or emergency.

Pre-event and post event meetings held with the Stakeholders Committee is also undertaken to identify safety risks requiring additional management. Members include;

- Event Producers and Senior Management Team;
- Legal Counsel;
- Event Licensee;
- Event Security;
- Event Medical Services;
- Venue Management;
- NSW Police;
- NSW Ambulance;
- Rural Fire Service;
- State Emergency Services;
- Roads & Maritime Services;
- Byron Shire Council; and
- NSW Parks & Wildlife Services.

6.2 Additional Safety Measures

The ICCS, ECC and all of the above safety measures would continue to be implemented for all medium and large events on the site. Smaller events would continue to be managed in accordance with detailed Event Management Plans. In addition to these measures, to further address NSW Police's concerns regarding patron intoxication and evacuation/invacuation of the site, it is proposed to establish a team whose primary role in the event of an emergency is to sweep the event area for patrons not responding adequately to evacuation requirements (possibly due to intoxication and or drugs).

The team has been named the "Pink Team" and will consist of those members of staff from the peer support team Red Frogs. These staff will also be supported by a number of senior site crew staff who have an intimate knowledge of the event design and layout. This team will form part of the evacuation radio network and will provide updates as required to the ECC with respect to systematically clearing event locations. The Pink Team will also assist less mobile patrons during any evacuation process.

The use of the Pink Team can also cover the campgrounds and other areas that may be deemed as potentially attracting patrons who may seek solace in areas with low patron footfall. This will allow for individuals to be managed in an appropriate manner removing them from any potential danger.

Another measure to improve safety and assist in identifying intoxicated and/or drug affected patrons in the event of an emergency is both an increase in the number and sophistication of CCTV coverage. It is proposed to employ high resolution, centrally controlled cameras that can zoom in on targets to assist in determining specific emergency response requirements associated with patrons not complying with evacuation procedures (potentially due to intoxication, etc).

The combination of dynamic high-resolution surveillance and the on-ground presence of the Pink Team to sweep event and campground areas will greatly improve the ability to manage intoxicated and/or drug affected patrons.

7. Community Support and Engagement

Supporting the community in which the venue operates is a key goal of Parklands'. Both the venue and events have developed a range of measures to engage and support the community, including:

- establishing the Regulatory Working Group, including community representatives, to oversee and advise on the performance of the events;
- establishing a Community Hotline for managing and responding to complaints and enquiries;
- employing a full-time environmental representative and full-time casual community advocate;
- employing a community manager before, during and after each large and medium event;
- undertaking annual Performance Reports;
- Performance Reports and minutes of RWG meetings placed on Parklands' website;
- notifying and keeping the community and relevant authorities up to date about each event;
- engaging security personnel, police and emergency services personnel for each event on a pay-for-service basis as required;
- a litter response team;
- resources to identify illegal parking and/or camping in the local area; and
- ongoing stakeholder consultation and engagement.

Parklands acknowledges that the local community most affected are the immediate neighbours and is committed to continuing to work with these stakeholders to identify opportunities to reduce unintended impacts. Communications have included pre and post event meetings, property visits and contact via Parklands' Community Manager, emails and telephone calls. Parklands has entered into negotiated agreements with all immediate landowners apart from one.

Parklands and/or the event organisers also provide immediate and surrounding neighbours with complimentary tickets for each medium and large event held on site (currently 4 tickets per household are provided, equating to approximately 400 tickets in total). Parklands and the event organisers have also implemented a range of measures to minimise issues associated with anti-social behaviour during events, including:

- improving site layouts in consultation with NSW Liquor licensing officers;
- partnering with Drinkwise Australia to promote a commitment to shaping a healthier and safer drinking culture in Australia;
- involvement in the STEER Youth Safe Transport Project, to assist patrons who are driving to make an informed decision on whether to drive home or not if they may be unsure of their blood alcohol concentration. This program will be expanded into the campgrounds on the Monday morning when campers are departing;
- partnering with Byron Youth Services, who also operate a free breath testing service;
- revision of the ticket terms and conditions which allow promoters to remove non-compliant patrons from the site;
- providing a 'red frog' program that involves approximately 40 volunteers who identify potentially alcohol (or drug) affected patrons and offer advice and assurance including a dedicated 'chill out' zone for monitoring patrons;
- expanding education programs to patrons surrounding alcohol and drug use through various social and media channels; and
- preparing and implementing a detailed Alcohol Plan of Management for events, which addresses event processes in relation to liquor management.

In addition to these mitigation measures Parklands, together with the Splendour and Falls Festival event organisers, have established the 'Parklands Community Grant Fund' to provide funding and in-kind support to community organisations and services. Since the start of the trial period in 2013, the fund has provided grants totalling approximately \$254,000 to community groups in the Northern Rivers. Since the commencement of the Splendour event in 2001, this event has provided over \$600,000 to community groups in the region.

With regard to social and economic issues, Parklands has achieved compliance with the social related project approval conditions and its KPIs for all events to date. Notwithstanding, a number of calls to the Community Hotline have raised social-related issues, with calls over the trial period to date including:

- 17 calls regarding internet reception and 9 calls regarding mobile reception issues, most of which were during the first three events;
- 11 calls regarding illegal camping, only 2 of which were subsequently found to be related to events at Parklands;
- 9 calls regarding illegal parking, 7 of which were in relation to the first event (ie. Splendour 2013);
- 5 calls regarding hotline access issues, all of which were in relation to Splendour 2014 associated with a temporary technical issue;
- 5 calls regarding trespassing; and
- 5 calls regarding littering.

All of these calls were recorded, investigated and addressed by Parklands in accordance with its management procedures. On the whole, it is considered that the events have been managed successfully and have not resulted in significant adverse social impacts.

The incidents that have occurred have been relatively isolated and/or temporary and have been considerably less than that feared prior to the project approval. Negative social impacts have been managed quickly and effectively and are commensurate with any large cultural event involving large amounts of people. On balance, Parklands believes that the positive social benefits arising from each event have far outweighed the isolated negative incidents.

The Department of Planning and Environment and the Independent Planning Commission have also indicated that, whilst some issues have been identified during the trial period, overall performance is satisfactory. In its determination of the most recent modification to the project approval (ie. MOD 4), the Commission noted that: *'Despite a small number of incidents, the Commission does not observe any systemic or recurring issues that indicate the events are not being managed appropriately or that necessary improvements are not occurring as a result of the trial. The Commission is satisfied the proponent is taking the relevant action to ensure ongoing management improvements. The Department's enforcement of conditions requiring continued improvement of event management plans, based on the performance of each trial event are effective in managing the events held on site.'*

Appendix A – Crowd Management Assessment

North Byron Parklands Cultural Events Crowd Management Assessment.

Overview.

North Byron Parklands (Parklands) operates a cultural events site at Yelgun near Byron Bay. The site is home to two of Australia's most iconic annual international cultural music festivals, Splendour in the Grass (Splendour) and the Falls Festival Byron (Falls Festival).

The Parklands site operates under a concept plan approval and project approval, granted by the NSW Planning Assessment Commission (the Commission) on behalf of the Minister for Planning on 24 April 2012 (MP 09_0028). The project approval has been modified on four occasions since this time.

The approvals are subject to a trial period, up to the end of August 2019. The approvals allow up to 20 event days per year, comprising 3 small to large events (of up to 35,000 patrons) for up to 10 event days per year, and up to 10 minor community event days (of up to 1,500 patrons).

The concept plan allows ongoing events after the trial period subject to further planning approval, meeting certain conditions of approval, and the satisfactory performance of the trial events.

Parklands is now seeking approval for ongoing use of the cultural events site following the trial period, including the continued use of existing site infrastructure and the development of additional infrastructure to support the cultural events site.

To date, 10 trial events have been undertaken as outlined below. (PJEP, 2017, p. 4)

Trial Event	Event	Date	Permitted Patrons	Event Days ¹
1st Large	Splendour 2013	Jul 13	25,000	4
1st Medium	Falls Festival 2013	Dec 13 - Jan 14	15,000	4
2nd Large	Splendour 2014	Jul 14	27,500	4
2nd Medium	Falls Festival 2014	Dec 14 - Jan 15	17,500	4
3rd Large	Splendour 2015	Jul 15	30,000	4
3rd Medium	Falls Festival 2015	Dec 15 - Jan 16	20,000	4
4th Large	Splendour 2016	Jul 16	32,500	4
4th Medium	Falls Festival 2016	Dec 16 - Jan 17	22,500	4
5th Large	Splendour 2017	Jul 17	32,500	4

The concept plan allows ongoing events after the trial period subject to further planning approval, meeting certain conditions of approval, and the satisfactory performance of the trial events.

The Parklands proposal seeks approval for the following events and the subsequent increase in patron numbers. (PJEP, 2017)

- 2 large events per year (ie. Splendour in the Grass and Falls Festival) over a maximum of 5 event days each, catering for up to 35,000 patrons per event day;

- 3 medium event days per year (for other music concerts or cultural events), catering for up to 25,000 patrons per event day;
- 5 small community event days, catering for up to 5,000 patrons per event day; and
- 2 minor community event days, catering for up to 1,500 patrons per event day.

Further, approval is sought for the progressive growth of one of the large events (ie. Splendour in the Grass) to 42,500 patrons and then 50,000 patrons a day, subject to meeting traffic-related key performance indicators (KPIs).

Police Submission.

A submission was received by the New South Wales Police (NSW Police Solicitor, 2018) in regard to the proposal submitted, highlighting specific areas in relation to crowd management, these being:

Pt 2. Crowd Crush

“Police hold grave concerns about crowd surge and crush within the amphitheatre should an unexpected event occur causing an uncontrollable crowd response. The applicant has indicated to police that the amphitheatre is capable of holding 40 000 people. Police are of the belief that such a crowd would present extreme risk and request that the applicant document in detail how numbers to this area will be monitored, limited and managed to prevent a crowd crush incident from eventuating” (NSW Police Solicitor, 2018).

Pt 5. Safety

“The concern police have is that if there is a mass evacuation or even a crowd crush situation that the levels of patron intoxication will exacerbate the levels of harm” (NSW Police Solicitor, 2018)

To date, Parklands has successfully managed crowds without major incident for all ten trial events.

Nonetheless, the following assessment has been commissioned by Parklands in order to address crowd management and safety concerns raised in the Police submission.

In order to show how the recommendations and conclusions have been made it is necessary to understand the methodology used in this assessment, specifically covering crowd capacity and safety management of the amphitheatre.

Crowd Management Assessment.

Currently in Australia there are no Australian standards or specific legislation with regards to crowd management. In most cases, reference is sought from Europe and the United Kingdom.

Local authorities in various states across Australia have endeavoured to compile best practice guidance and again, these documents invariably refer back to the standards/guidance documentation found in the UK and Europe.

The following documents have been used as a point of reference and clarification for this assessment with a full bibliography listed at the rear of the document:

- Attorney General’s Office, 1999. Safe and Healthy Mass Gatherings. [Online]

Available at: <https://knowledge.aidr.org.au/media/1959/manual-12-safe-and-healthy-mass-gatherings.pdf> [Accessed 12th January 2018].

- Australia, L. P., 2018. Audience and Crowd Management. Sydney: Live performance Australia.
- Australian Building Codes Board, 2005. Building Codes of Australia Class 2 to 9 Buildings Volume 1. 2005 Edition ed. Canberra: CanPrint Communications.
- Australian Disaster Resilience Handbook, 2018. Checklist-Reference document of checklists. Canberra: Commonwealth Government Australia.
- Environmental Health Directorate, 2009. Guidelines for Concerts events and organised Guidelines. Perth: Government of Western Australia.
- Executive, H. a. S., 1996. Managing Crowds Safely. 2nd ed. Norwich: Her Majesty's Stationary Office.
- Health and safety Executive, 1993. The Event Safety Guide. 2nd ed. Norwich: Health and Safety Executive.
- Resilience, A. I. f. D., 2018. Safe and Healthy Crowded Places (Handbook 15). ACT: Commonwealth.
- Sports Ground Safety Authority, 2015. Alternative Uses of Sports Grounds. 1st ed. London: Sports Ground Authority.
- Victorian Government Department of Health., N/K. Code of Practice for Running safer music festivals and events, Melbourne: Victorian Government.

It should be noted that a new Australian Standard, known as *HB183 Crowd Management for Crowded Places*, Sydney: Standards Australia (Australia, 2018)is currently being finalised and is expected to be released in July 2019. The author of this assessment currently holds the chair for the standards technical committee for the preparation of this new standard.

Experience and Expertise.

This assessment report has been prepared by Jim Fidler and Robbie Naish.

Jim Fidler has 30 years' collective service between Metropolitan Police (Public Order Unit) London and commercial security in the United Kingdom, Europe and Australia. Jim is a specialist security and crowd management consultant, actively practicing in Australian crowd management, major events and festivals and he is regularly deployed on short-term contracts globally to support government and corporate organisations with best-practice major event security management. Jim is currently the only licensed Security Consultant in Australasia to possess a formal crowd management qualification.

Jim has a policing background specialising in public order, having served with metropolitan police public order units. Since leaving the police Jim has moved into specialising in crowd management and crowd risk. As well as operational experience around the world Jim has pursued academic qualification specific to crowd management and security obtaining the following.

- 2016 (October) *Advanced Certificate in Terrorism Studies-St Andrews University UK*;
- 2014 *Diploma Crowd Science and Crowd Risk Analysis (Distinction)*;
- 2007 *Foundation Degree-Crowd and Safety Management (Buckinghamshire Chilterns University College, UK [BCUC])*;
- 2002 *Higher National Diploma-Disaster Engineering and Relief Management (Coventry University, UK)*;
- 2003 *Diploma, Risk Management (CSA Training Services RTO 2886 Australia)*.

Jim has also maintained professional development and has been invited to attend additional areas of crowd management and public order training/education, including:

- *2016 Police Event Commanders Course (Venues, Stadiums and Events) College of Policing-(Avon and Somerset- Triforce Public Order unit);*
- *2014 Australian Institute of Police Management Certificate –Crowd Psychology and Public Order Management;*
- *2009 UTS Executive Certificate in Crowd Management; and*
- *2006 UTS-Short Course in Safety and Crowd Management.*

Jim is an Accredited Venue Manager through the Venue Managers Association and a Specialist Member of the International Institute of Risk and Safety Management.

Robbie Naish has over 20 years' experience in the events industry. He is responsible for the planning and execution of complex crowd management plans, which has included the 2014 Tour de France, all road events at the 2014 Commonwealth games and the Queens Royal Pageant in central London. Robbie was also the lead crowd manager for some of the UK's biggest music events that include the Glastonbury Festival (150,000 patrons), V Festival (90,000 patrons), IOW Festival (80,000 patrons) and the Boomtown Festival (60,000 patrons).

Robbie teaches the Diploma in Crowd Science and Risk analysis around the world to different organisations that include The South Australian Police, WA Police, and has had officers from Queensland and New South Wales on his courses. The courses are designed to engage all the different parties involved in the Crowd Management of events so that a safe event can be planned and analysed.

Robbie's also has a background in HM Forces, UK Fire and Rescue Service and as a director for one of the UK's leading crowd management companies. He holds a Degree in Crowd Safety Management and numerous other crowd safety qualifications.

Event Safety at Parklands.

A range of hazards and risks were considered in detail during the assessment of the original project application, and continue to be assessed, monitored and managed before, during and after all events. Emergency preparedness and response is integral to Parklands' Environmental Health and Safety Management System (EHSMS). The EHSMS is outlined in detail in the environmental impact statement (EIS) for the proposal. Some of the key measures undertaken by Parklands to manage hazards and risks include:

- a comprehensive Event Management Plan is prepared for each event, that includes amongst other things:
 - an Event Safety Plan;
 - an Event Emergency Evacuation Plan;
 - a Medical Plan; and
 - a Camping Management Plan;
- a comprehensive Bushfire Management Plan and Bushfire Emergency Evacuation Plan;
- a comprehensive Flood Risk Management Plan and Flood Evacuation Plan;
- hazards monitoring and feedback through the Regulatory Working Group (RWG), which includes representatives from the Rural Fire Service (RFS), State Emergency Service (SES) and NSW Police;

- hazards and incident simulations and exercises, in collaboration with emergency services authorities; and
- provision of detailed security, police and emergency service personnel during events, which are funded by Parklands on a pay-for-service basis. The resourcing requirements for each of the authority's services are determined by the authorities themselves, in consultation with Parklands.

Central to the management of hazards and risks during events is Parklands' and the event organisers' Incident Command and Control System (ICCS), which is coordinated through the Event Communications Centre (ECC). The ECC is located within the event area for each medium and large outdoor event, operates 24 hours a day and is managed by specialist event security management and medical personnel, together with lead agencies which may include NSW Police, RFS and NSW Ambulance. A flowchart showing the main components of the ICCS is shown in Figure 1 on the following page.

INCIDENT COMMAND AND CONTROL STRUCTURE

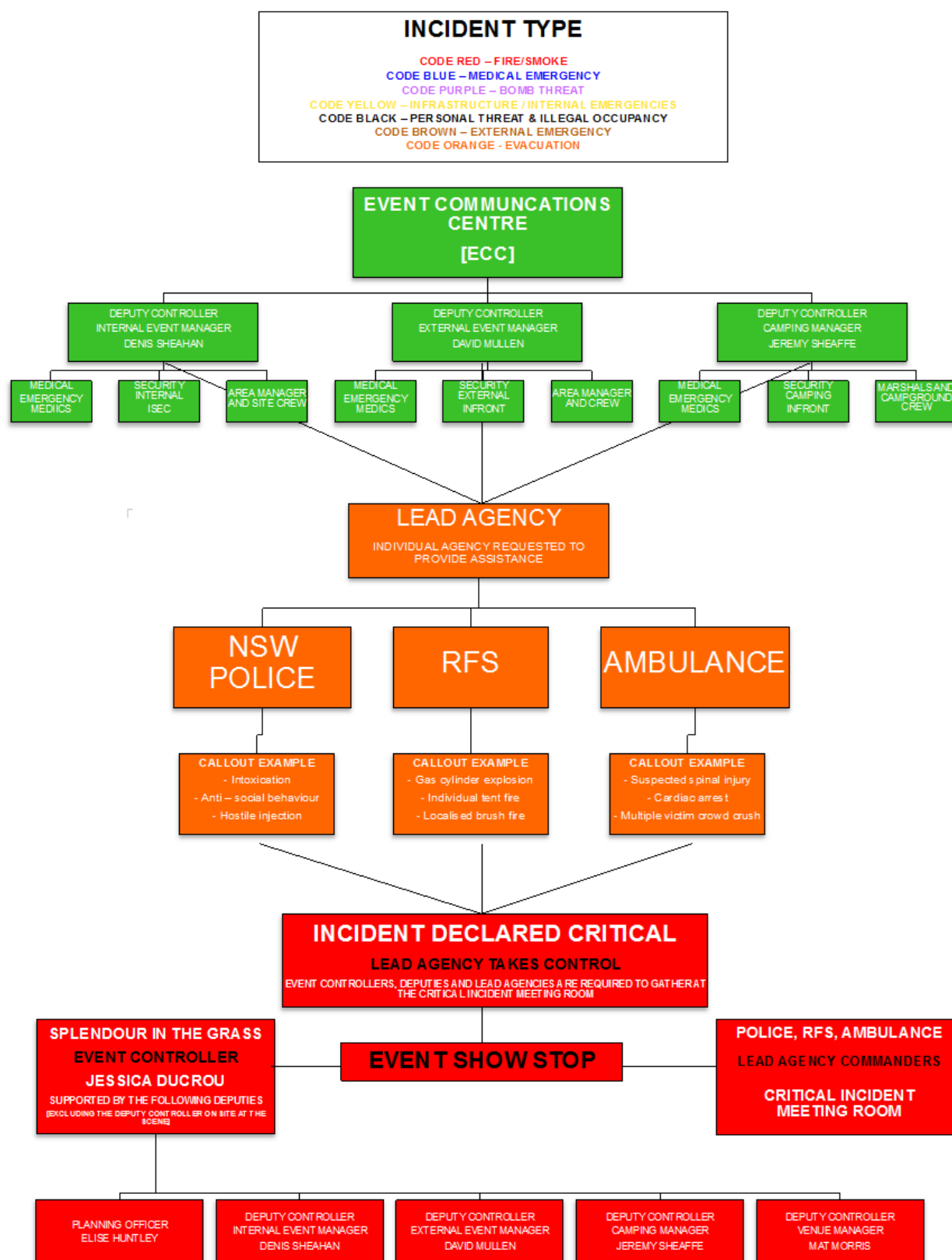


Figure 1: Incident Command and Control Structure.

The ECC comprises a coordinator, internal event security manager, external event security manager and campground manager, along with a number of area managers and crew within each of these 3 functional management areas. Each of the functional areas coordinate with support staff including:

- medical practitioners;
- internal and external security;
- operations response staff;
- venue management staff;
- campground managers; and
- traffic and car park managers.

All incidents are tracked and coded by incident type using a proprietary software, including:

- fire/smoke;
- medical emergency;
- bomb threat;
- infrastructure/internal emergency;
- personal threat and illegal occupancy;
- external emergency; and
- evacuation.

Lead agencies monitor all ECC operations and incidents, and generally each have a mobile command centre located within the event area adjacent to the ECC. Where required, lead agencies are requested to provide assistance to identified incidents. Examples may include:

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • NSW Police: <ul style="list-style-type: none"> ○ intoxication; ○ antisocial behaviour; and ○ trespass. | <ul style="list-style-type: none"> • Rural Fire Service: <ul style="list-style-type: none"> ○ gas cylinder explosion; ○ individual tent fire; and ○ localised brush fire. | <ul style="list-style-type: none"> • NSW Ambulance: <ul style="list-style-type: none"> ○ suspected spinal injury; ○ cardiac arrest; and ○ crowd injuries or disease outbreak. |
|---|---|---|

In the event that an incident is declared critical, the applicable lead agency will take control and coordinate the response in consultation with the event controller, other lead agencies and emergency services. A critical incident response room is located near the ECC for the coordination of critical incidents.

The ICCS and ECC would continue to be implemented for all medium and large events on the site. Smaller events would continue to be managed in accordance with detailed Event Management Plans, as outlined above.

As the land owner Parklands has a contractual requirement with events held at this venue to comply with its Environmental Health and Safety Manual and the Event Management Plan in addition to other specific documentation. (Mat Morris North Byron Parklands, 2015). As part of these requirements the following event management plan parameters are required.

Event Management Plan Set

As part of the Event Management Plan, develop an Event Management Plan Set that provides plans covering:

- the internal layout of the event;
- the location of all temporary structures;
- performance stages;
- food stalls;
- sanitary facilities;

- camping areas (if applicable);
- car parking areas;
- emergency assembly areas
- flood and bushfire emergency evacuation plans
- security guard surveillance services.
- location of lighting.

Splendour and Falls Festival currently fulfil the requirements of the North Byron Parklands Environmental Health and Safety Management Manual and in some cases exceed the requirements.

It should be noted that the organisers of Splendour and Falls Festival with their Safety Working committee would be deemed as meeting best practice based on the Safety Advisory Group² concept from the United Kingdom. (Health and Safety Executive , 2018)

The Safety Working Committee currently exceed the requirements of the Parklands Event Management Manual with additional documentation and planning provided in the form of the following:

- Security Management plan;
- Alcohol Management Plan;
- Amphitheatre management plan;
- Crowd Management Plan (2018).

Principles of Crowd Management

The following definition is internationally acknowledged as best practice with regards to crowd management and forms the basis on which planning and mitigation strategies are implemented

Crowd Management is defined as: “The systematic planning for, and supervision of, the orderly movement and assembly of people. Crowd management involves the assessment of the handling capabilities of a space prior to use. It includes evaluation of projected levels of occupancy, adequacy of means of ingress and egress” (Fruin, 1993),

Crowd Management Assessment Methodology.

In assessing the Site and specifically the amphitheatre with regards to ‘crowds’ the writer has used the systems/methods that have established by Dr Prof Keith Still (Still, 2014) and often referred to as ‘DIM ICE’³

The DIM-ICE model implies that there are:

three main influences on crowd behaviour (design, information and management) and *three main phases* of crowd behaviour (ingress, circulation and egress). These are outlined below.

² Hillsborough disaster and the recommendation from Lord justice Taylor.

³ Other alternatives are available such as Force Information Space Time (FIST) (Fruin, 1993) or Arrival Ingress Movement Egress Dispersal (AIMED) (Sports Ground Safety Authority, 2015).

Design – The crowd will manoeuvre through the built and complex spaces interacting with local geometry, topography, barriers, and the like. It is important to calculate capacity, flow rates and their influences on crowd behaviour.

Information – Signage, PA announcements, advanced notifications, local and national media as well as social media will influence crowd behaviour. We map these influences to assist the overall crowd management strategy and help shape the crowd behaviour arriving, during and departure of the site. This assesses how information communicated will affect crowd behaviour.

Management – Security ushers, policing and event timings can all affect the crowd behaviour. Monitoring the crowd and using that information to deploy resources as required.

Ingress - Where a crowd is arriving in anticipation of getting a good vantage point for the event is first phase. It is important to assess the arrival profile of an event to ensure adequate and safe ingress capacity.

Circulation - During the event, the facilities planning and layout can influence crowd behaviour. Excessive queues, poor signage and the like can alter the mood of the crowd and affect the success of the event. Crowds should be monitored for behaviour and capacity at key locations throughout the event.

Egress - Typically crowd dynamics during egress is to leave as quickly as possible. This can lead to anxiety and aggression.

In using the meta-modelling one can highlight where in the phases and influences the risks are High (red), Medium (orange) or Low (green). It is a useful checklist to ensure the crowd management plan has considered both the phases and influences of crowd behaviour (Still, 2014). The colours assist in understanding (red needs to improve, orange needs to be monitored, green covers the systems that are operating efficiently) the risk. Once management measures and mitigation practices are in agreeance through the Safety Working Committee, the agreed measures can be written up in the crowd management plan.

The following DIM-ICE document shows current and proposed strategies for the Amphitheatre and the perceived risks as a colour (Table 1 and Table 2)

- **Red** - Improve
- **Orange** - Observe
- **Green** - Functioning

Table 1: Crowd Management Strategies

NORMAL	Ingress	Circulation	Egress
Design	- Adequate Ingress routes into the venue. - Ability to close Ingress routes down. - Ability to use alternate Ingress routes - Viewing area provides unobstructed views of the stage providing additional space for patrons. - Stage design and alignment to minimise loss of sight lines.	- Movement pathways in the location (middle pathway and upper pathway) - Alternate routes for patrons to move around the venue. - Areas available for patron movement away from high density locations. - Front of Stage barrier system has breakaway areas stage left and stage right in the event that pressure increases. - Stage right has installed an EXIT only gate that is located within the barrier system and allows for immediate pressure release if needed.	- Additional egress routes have been added for the Venue, those being the stage right barrier break out gate and the additional pathway to be located on the top pathway and nominated as PINK pathway. - Egress points are designed to move patrons away from pre-Loaded areas - Ability to use alternate routes for egress.
Information	- Appropriate signage - The use of social media for timings as well as safety messages. - Stage screens for messaging. - Social media content providing appropriate health mitigation information.	- Social media allows for up to date messaging regarding acts and artist change. - Appropriate signage for directing patrons to alternate areas of the site.	- Good use of signage and pro-active crowd management giving directions to patrons leaving the area. - Use of VMS electronic signs with messages and directional arrows to all exits.
Management	- Management system in place for the amphitheatre. - Ingress closure system in place for alternate routes. - Dedicated security team for the amphitheatre. - Documented closure and diversion Plan in place for the amphitheatre. - Emergency management plan in place and accepted by stakeholders. - Amphitheatre manager appointed for the venue.	- Amphitheatre closure process in place to allow for Patron fill of alternative areas of the Venue. - Show-stop process in place to allow for immediate response for stopping the show. - Appropriate movement corridors and sealed pathways located around the venue allows for patron movement	- Clear communication with the event control - Sector supervisors under the command of Qualified managers. - Joint operation with the police commander on site. - Trained and well briefed security staff working alongside all of the above.

Table 2: Crowd Management Strategies

Emergency	Ingress	Circulation	Egress
Design	• Ability to close Ingress routes down. • Ability to use alternate Ingres routes • Viewing area provides unobstructed views of the stage providing additional space for patrons. • Stage design and alignment to minimise loss of sight lines. • Adequate ingress routes into the venue.	• Movement pathways in the location (middle pathway and upper pathway) • Alternate routes for patrons to move around the venue. • Areas available for patron movement away from high density locations.	• Additional egress routes have been added for the Venue, those being the stage right barrier break out gate and the additional Pathway to be located on the top pathway and nominated as PINK pathway. • Egress points are designed to move patrons away from pre-Loaded areas
Information	• Appropriate signage • The use of social media for timings as well as safety messages. • Stage screens for messaging.	• Appropriate signage • The use of social media for timings as well as safety messages. • Stage screens for messaging. • Safety security staff giving information using mega phones with pre-scripted messages. • VMS signage with arrows and messages for the safest route from the Amphitheatre.	• Good use of signage and pro-active crowd control marshals giving directions to patrons leaving the area. • Use of VMS electronic signs with messages and arrows guiding patrons to all the exits. • Emergency messages, pre-script from the main stage, reassuring patrons and encouraging safe egress from all exits.
Management	• Management system in place for the Amphitheatre. • Ingress closure system in place for alternate routes. • Dedicated security team for the amphitheatre. • Documented closure and diversion Plan in place for the amphitheatre. • Emergency management plan in place and accepted by stakeholders. • Amphitheatre manager appointed for the venue.	• Management system in place for the amphitheatre. • Ingress closure system in place for alternate routes. • Dedicated security team for the Amphitheatre. • Documented closure and diversion plan in place for the amphitheatre. • Emergency management plan in place and accepted by stakeholders. • Amphitheatre manager appointed for the venue.	• Clear communication with the event control. • Sector supervisors under the command of qualified crowd managers. • Joint operation control set up in ECC • Joint operation with the Police Commander on site. • Trained and well briefed security staff working alongside all the above. • Extra crowd management and security staff drafted in from Pre-arranged call sign.

Capacities

In addressing the Capacities for the amphitheatre this assessment has based all calculations on the recommendations provided by Dr Prof Keith Still. (Still, 2014).

The conceptual risk associated with crowds within a given space are illustrated in Figure 2 below. Each box represents 1 metre Square, with the figure above the box indicating the number of people in that square. This ranges in density from the 1 person per square metre (Green Low Risk) to 5 people per square metre (Red High Risk), (Still, 2014).

The application of colours to the diagram allows for a clear indication as to when an area would be deemed as having a high density and high relative risk. It is noted that Australia does not have currently have any specific standard for maximum capacities or crowd densities at festivals.

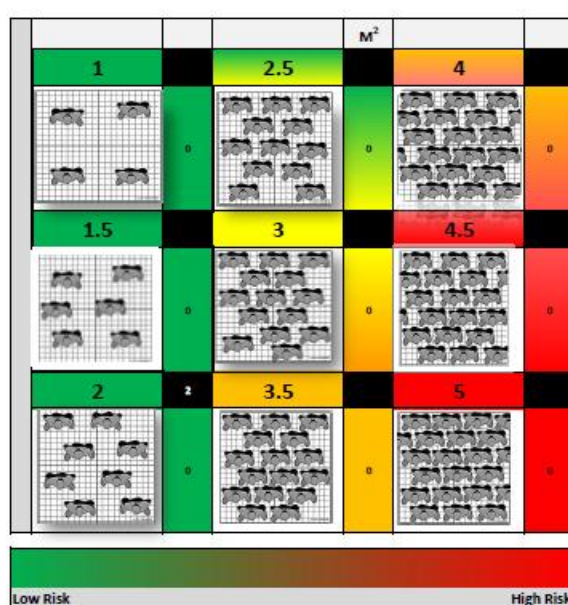


Figure 2: Crowd Density Representation Diagram

The photographs in Attachments 1, 2 and 3 provide additional visual representation of various crowd densities per square metre.

In consideration of appropriate capacities for Parklands the following documents have been referred to:

- Australia, L. P., 2018. Audience and Crowd Management. Sydney: Live performance Australia.
- Australian Building Codes Board, 2005. Building Codes of Australia Class 2 to 9 Buildings Volume 1. 2005 Edition ed. Canberra: CanPrint Communications.
- Australian Disaster Resilience Handbook, 2018. Checklist-Reference document of checklists. Canberra: Commonwealth Government Australia.
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Amphitheatre Capacities.

The capacities for the amphitheatre have been calculated using a mapping tool⁴ that has the ability to accurately measure the area.

In calculating the areas it should be noted that the “mapped area” was based on the following.

- A 10% redundancy was calculated for consideration of those areas that would not contribute to capacity, however are still in the amphitheatre venue. (e.g. walkways, movement towards toilets etc).
- The amphitheatre was split into 3 Areas, which were allocated and mapped based on the following:
 - Photographic evidence of previous events;
 - Attendance at Splendour 2017 and Falls Festival 2017/18;
 - Consultation with stakeholders;
 - Consideration for the topography of the area; and
 - Location of pathways and viewing points.
- The 3 Areas have defined as follows:
 - Area A Front of Stage (hardstand);
 - Area B. Lower amphitheatre area; and
 - Area C. Upper amphitheatre area.
- Other specific areas that are known to hold patrons **have not** been included. However, these areas will provide additional space for crowd movement during any potential crowd response, Areas of note include:
 - Stage Right;
 - Stage left;
 - The Hatching;
 - All Pathways;
 - Mal’s Gate; and
 - Rear of Area C.

NOTE:

The capacities reflect a static audience with no movement and the expectation that patrons will seek out their own area of comfort with regards to crowd densities and viewing opportunities which will result in patrons moving around the venue to find additional space.

⁴ <https://www.nearmap.com.au/>

It is also expected and accepted that there will be some localised high density areas for short periods of time based on patron personal space requirements (i.e. patrons moving from higher to lower densities and vice versa).

Figures 3, 4 and 5 provide an indication of the anticipated densities for each of the designated areas based on the various event sizes, being 35,000, 42,500 and 50,000 patrons. Each of the 3 Area capacities have been based on the following anticipated crowd movement into the amphitheatre.

Area A Front of Stage (hardstand) – In this area it would be expected that the crowd density would be the highest of all 3 areas based on the following:

- Natural progression of attendees to fill up from front of the stage backwards;
- Individual's preference to be located at the front of the stage to view a specific act;
- Historical evidence that this area is the highest density of the amphitheatre; and
- Photographic evidence of patron densities for this area.

Area B. Lower Amphitheatre Area – In this area it would be expected that the crowd densities would be lower than Area A based on the following:

- Natural progression of attendees who are unable to move into Area A to move towards the secondary barrier in this location;
- Patron comfort, individuals wishing to have more space;
- Historical evidence that this area is of lower density; and
- Photographic evidence of patron densities for this area.

Area C. Upper Amphitheatre Area – IN this area it would be expected that the crowd densities would be the lower than Area A and Area B based on the following:

- Patron comfort, individuals wishing to have the greatest level of space;
- Historical evidence that this area is of lower density; and
- Photographic evidence of patron densities for this area.

While the amphitheatre has the ability based on this assessment to accommodate patron numbers up to 50,000, it should be noted that this is based on a static 'non dynamic' crowd. The reality is that "all patrons" would never be located just in the amphitheatre, regardless of the event capacity as a certain number of patrons would be frequenting the following:

- Watching other performers at other stages with capacities of 7,500 at the Mix Up stage, 4,000 at the GW Stage and 2,500 at Tiny dancer;
- Patron numbers moving around the site, generally;
- Patrons located in bars and food vendor stalls;
- Patrons in the campgrounds;
- Patron using shower/toilet amenities;
- Weather conditions which may result in reduced numbers in the amphitheatre (i.e. rain); and
- The type and popularity of artist performing will impact the numbers of patrons attending

Figure 3: Patrons Densities – 35,000 - Amphitheatre

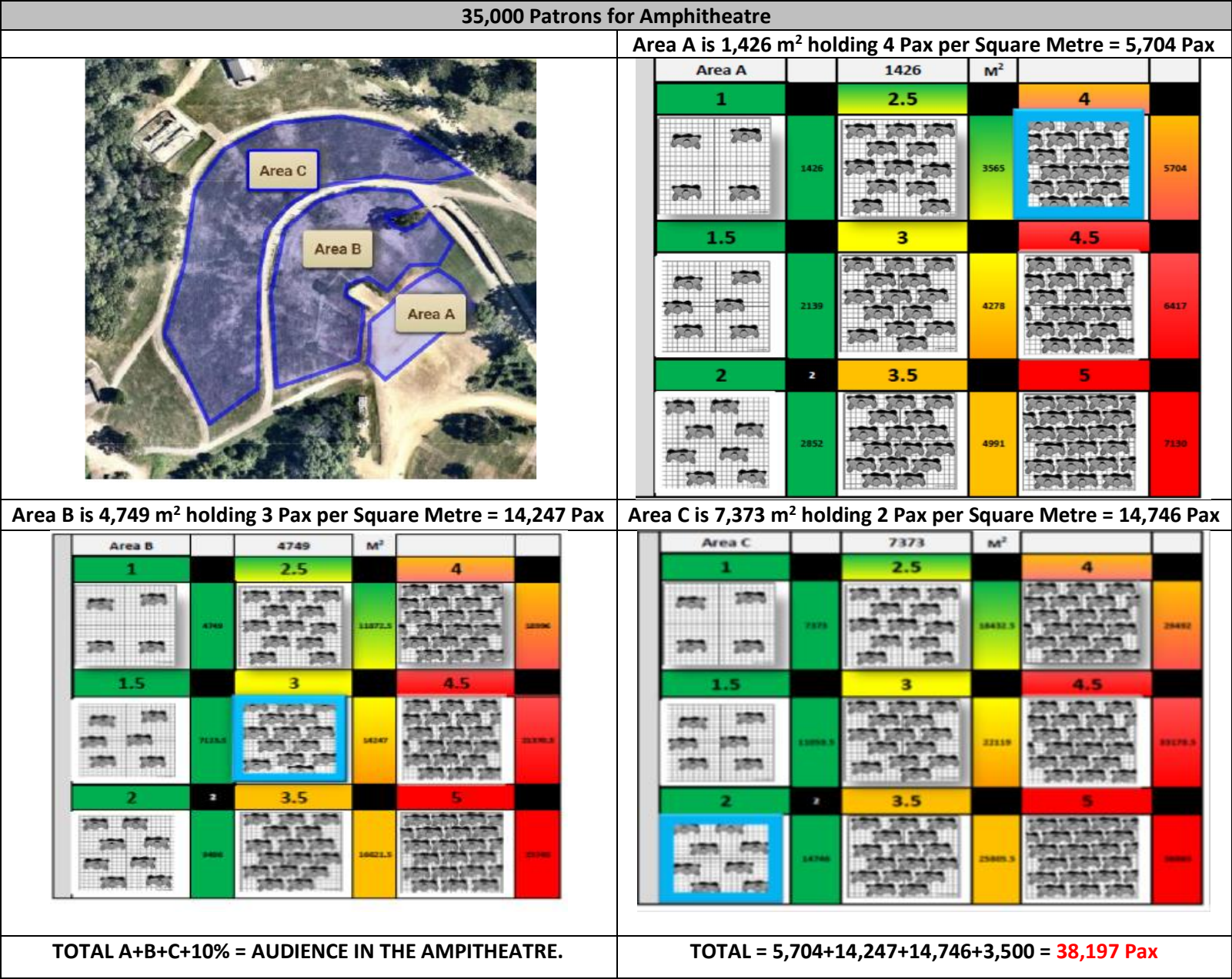


Figure 4: Patrons Densities – 42,500 - Amphitheatre

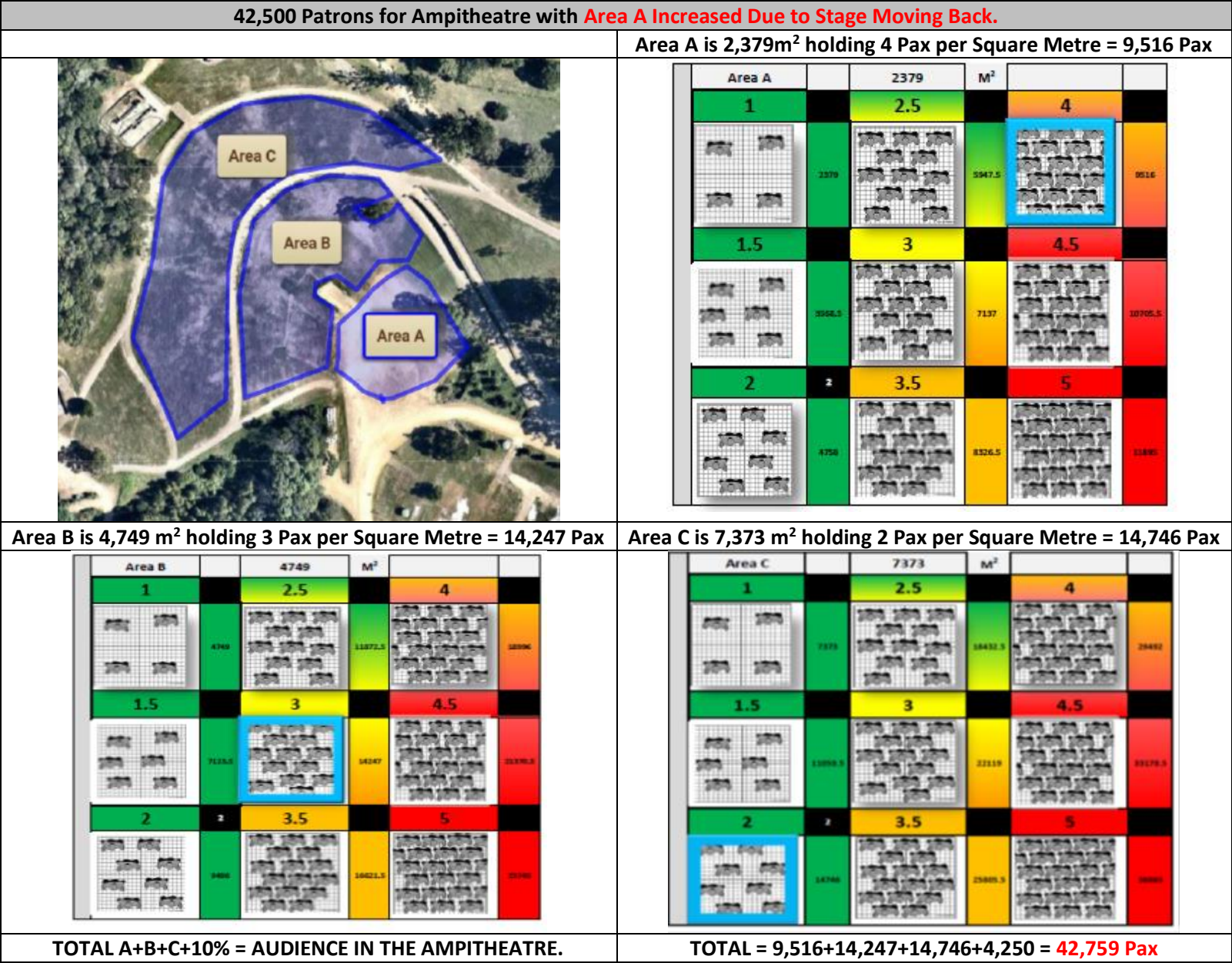
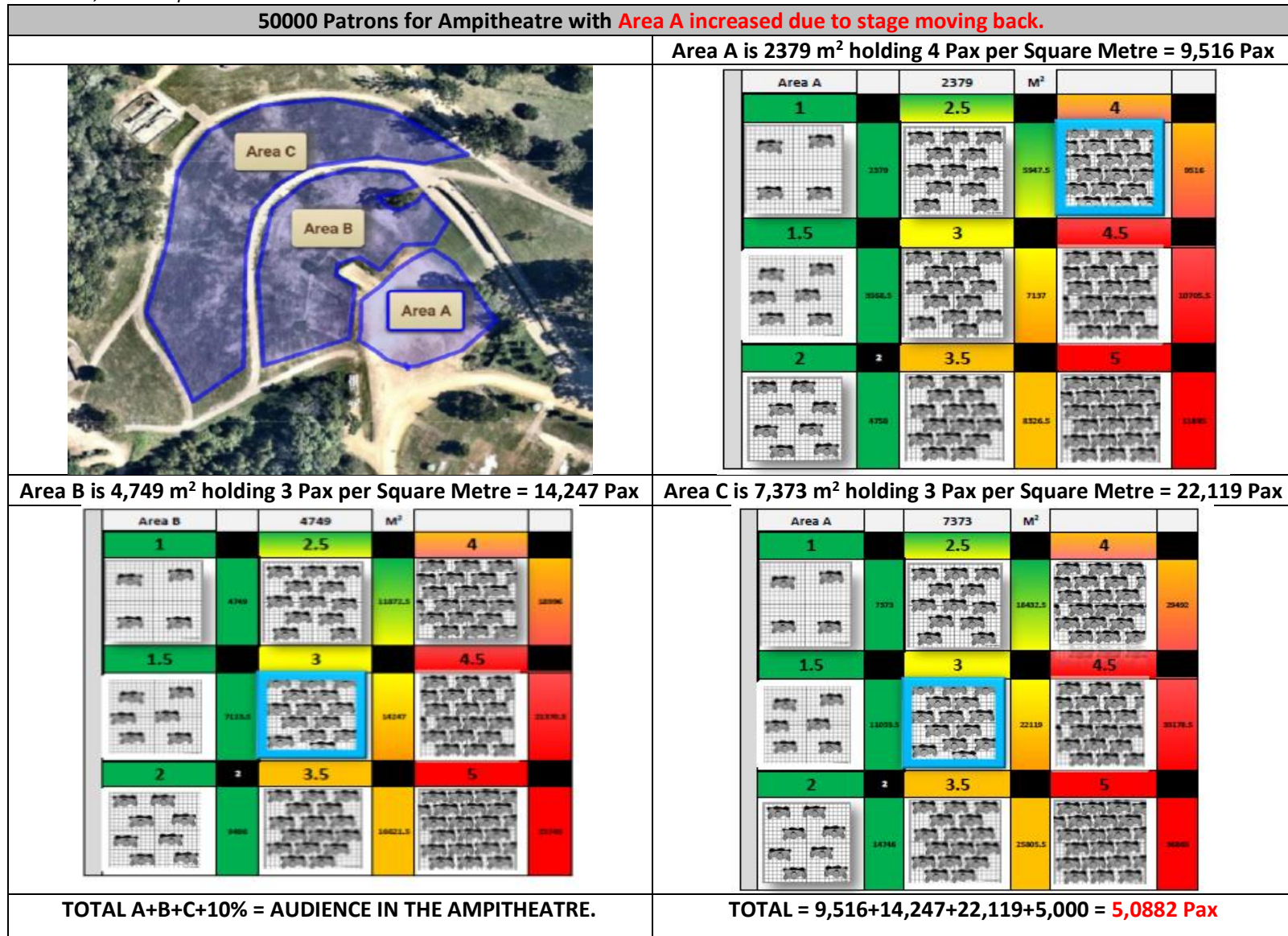


Figure 5: Patrons Densities –50,000 - Amphitheatre



Ingress/Egress rates

The ability to move patrons into the amphitheatre (i.e. ingress) is not considered to present a high risk, however in the event of an incident the need to move patrons out and potentially away from the area (i.e. egress) is essential. In measuring the egress rates several references have been used as outlined in the following table, with the highest rate being 95 patrons per minute per metre. However, 82 people per minute per metre width is considered the norm for measuring egress (Australian Disaster Resilience Handbook , 2018) and for the purpose of this assessment the report has included an upper and lower range of rate for comparison.

PMM=people per metre per minute (Still, 2017)			
	Year	Country	Max Rate
Fruin	1971	USA	82ppm
Puskarev	1975	USA	82ppm
HCM	1994	USA	82ppm
Brillon	1994	Germany	95ppm
Polus	1994	Israel	95ppm

Egress rates for the amphitheatre have been calculated using the following methodology. The 3 areas that have been designated as holding patrons for the purposes of the capacity assessment identified routes of passage that can be accessed if the need arises. These are known widths and therefore the “throughput” of each gate (routes) have been colour coded for clarification (refer to Figure 6). The egress has been broken down into each area and then as a combined egress for the whole amphitheatre.

Figure 6: Patron Egress Routes - Amphitheatre



Stage Right	Stage left	Lower Walkway Exit	Lower Walkway	Upper Walkway additional path	Exit path Rear of Amphitheatre	Exit Path Rear of Amphitheatre	Mals Gate Pathway
3	7	8	6	10	10	10	5

In assessing the egress time for the amphitheatre, the following has been considered based on industry practice and reference from the UK, (The Scottish Office, 2003 Fourth Edition). The egress time is the total time in which all patrons can, in normal conditions, leave an area of viewing accommodation and enter into a free-flowing exit system. It does not include the time taken to negotiate the entire exit route. The following points have been considered with regard to the egress from the amphitheatre:

- There should be more than one egress route from a viewing area;
- The system should be designed in such a way that the loss of one egress route does not prevent access to an alternative;
- Egress routes should discharge into a place of safety, preferably in the open air; and
- The total egress time for the amphitheatre for various throughput rates, based on the various event sizes, are shown in the following Tables 3, 4 and 5.

Area A-5704 Pax											
Throughput	3	7	8	6	10	10	10	5	Total throughput	Time taken (minutes)	Time Taken (Total Patrons/Total throughput)
95	285	665	760						1710	3.335672515	
82	246	574	656						1476	3.864498645	
60	180	420	480						1080	5.281481481	
45	135	315	360						810	7.041975309	
Total Throughput for that Gate per Minute (Throughput X Meterage)											

Table 3: Patron Egress Rates – 35,000 - Amphitheatre

35000 Pax										
Area A-5704 Pax										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	Gates Not used					1710	3.335672515
82	246	574	656						1476	3.864498645
60	180	420	480						1080	5.281481481
45	135	315	360						810	7.041975309
Area A and B 19951 Pax										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	Gates not used				475	7.241742287
82	246	574	656	492					410	8.389823381
60	180	420	480	360					300	11.46609195
45	135	315	360	270					225	15.28812261
Area A/B/C 34697 Pax + 10% Total 38197										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	950	950	950	475	5605	6.814808207
82	246	574	656	492	820	820	820	410	4838	7.89520463
60	180	420	480	360	600	600	600	300	3540	10.79011299
45	135	315	360	270	450	450	450	225	2655	14.38681733

Table 4: Patron Egress Rates – 42,500 - Amphitheatre

42500										
Area A-9516 Pax										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	Gates Not used					1710	5.564912281
82	246	574	656						1476	6.447154472
60	180	420	480						1080	8.811111111
45	135	315	360						810	7.291954023
Area A and B 23763 Pax										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	Gates not used				475	2755
82	246	574	656	492					410	2378
60	180	420	480	360					300	1740
45	135	315	360	270					225	1305
Area A/B/C 38509Pax +10% 43009 pax										
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	950	950	950	475	5605	7.673327386
82	246	574	656	492	820	820	820	410	4838	8.889830508
60	180	420	480	360	600	600	600	300	3540	12.14943503
45	135	315	360	270	450	450	450	225	2655	16.1992467

Table 5: Patron Egress Rates – 50,000 - Amphitheatre

50000										
	Area A-9516 Pax									
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	Gates Not used					1710	5.564912281
82	246	574	656						1476	6.447154472
60	180	420	480						1080	8.811111111
45	135	315	360						810	7.291954023
	Area A and B 23763 Pax									
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	Gates not used			475	2755	8.625408348
82	246	574	656	492				410	2378	9.992851135
60	180	420	480	360				300	1740	13.65689655
45	135	315	360	270				225	1305	18.2091954
	Area A/B/C 38509Pax +10% 50882 pax									
Throughput	3	7	8	6	10	10	10	5	Throughput	Time take- minutes
95	285	665	760	570	950	950	950	475	5605	9.077966102
82	246	574	656	492	820	820	820	410	4838	10.51715585
60	180	420	480	360	600	600	600	300	3540	14.37344633
45	135	315	360	270	450	450	450	225	2655	19.1645951

As there is no current standard with regards to the egress time from a “greenfield site” it is necessary to consider options for the egress rate. For this report that has been taken at 95 Pax per metre width per minute at the high end with the low end being 45 Pax per metre width per minute. It should be noted that the Green guide (for football stadiums) states 109 pax per metre per minute (The Scottish Office, 2003 Fourth Edition, p. 80 9.6(b)) In this instance the egress calculations have been taken as a lower rate and therefore based on the Green Guide the amphitheatres egress times would be quicker.

The amphitheatre does not fall within any guidelines with regards to egress times in an emergency, the nearest application being those provided in the green guide (The Scottish Office, 2003 Fourth Edition) for a football stadium.

The egress routes for the amphitheatre have been minimised based on the footpaths available and visible and has not taken into consideration the open spaces at the rear upper amphitheatre and to the stage right of the lower amphitheatre areas, these would increase the meterage available for egress and so lower any evacuation time.

Crowd Movement.

The police submission identifies “uncontrolled crowd response” and “crowd surge” as being a risk associated with the proposed increase in the capacities, which could potentially result in “crowd crush”. It is noted these risks are not necessarily specific to concerts and festivals but can also be found anywhere within the built environment and everyday business where crowd densities are elevated.

Crowd movement at any event is predictable and, in some cases, will be expected (e.g. due to the nature of the artist). This aspect has been examined in the soon to be published guidance “Safe and Healthy Crowded Places” (Attorney Generals Office, 1999; Resilience, 2018).

The effect of a crowd surge can potentially result in injuries due to individuals being pushed up against infrastructure.

Other concerns that are noted and referenced (Executive, 1996, p. 18) include:

- Crushing between people;
- Trampling underfoot;
- Slipping or tripping due to inadequately lit areas or poorly maintained floors;
- Collapse of structure; and
- Crowd movements obstructed by people queuing.

In order to provide a response with regards to the 3 components of the submission (surge/response/crush) this assessment will look at them individually.

Crowd Surge.

As mentioned above the potential for crowd surge is less for events where crowds are predictable and expected and can be managed at an operational level through pre-assessment of the acts. This assessment allows for pre-emptive planning and for the implementation of potential additional mitigation, such as:

- Additional spotters on stage;
- Additional security resources within the safety barrier;
- Additional security resources in the front of stage area; and
- Additional infrastructure if needed, such as the use of Front of Stage Barrier Systems (FOSB).

The following mitigation is currently in place to minimise the impact and potential for crowd Surge.

The amphitheatre is split up into the distinct viewing areas that allow for the festival to move and direct patrons into specific areas including the front of stage (hardstand), rear of the front of house tower, and finally the viewing area separated by the middle pathway. For the purposes of this assessment they have been designated as areas A, B and C as shown in Figure 7 below:



Figure 7: *Defined Areas – Amphitheatre*

Area A would be deemed as the highest risk area for the potential for crowd surge as well as the most likely area for the more exuberant patrons to occupy. This area is located on the hard stand and is bordered by the:

- Front of Stage Barrier System (FOSB) between the area and the stage;
- The Front of house monitoring system at the rear; and
- The secondary barrier system that has been placed in this location to remove the impact of any surge from the Area B enclosure.

It is noted that the secondary barrier located at the front of house is of the same design as that used for Glastonbury (holding 150,000+ patrons), which also has the topography issues of a slope. It is also noted that the barriers are designed and installed in accordance with best practise which provides that: *“A curved barrier can provide other benefits such dissipating audience surges away from the centre of the stage”*⁵ (Executive, 1996)

The use of the curved barrier at the front of the stage and also on the secondary barrier allows for the dissipation of pressure towards those areas of the site with lower capacity. The addition of the break out gate at stage right alongside the stage provides additional crowd surge mitigation by allowing an additional capability to rapidly remove pressure if there is a surge.

Due to its design and viewing areas, the amphitheatre allows for low density areas to be maintained stage right and stage left of the main stage, which facilitates crowd movement and removes the potential for crowd crush on infrastructure. These measures are demonstrated in Figure 8 below:

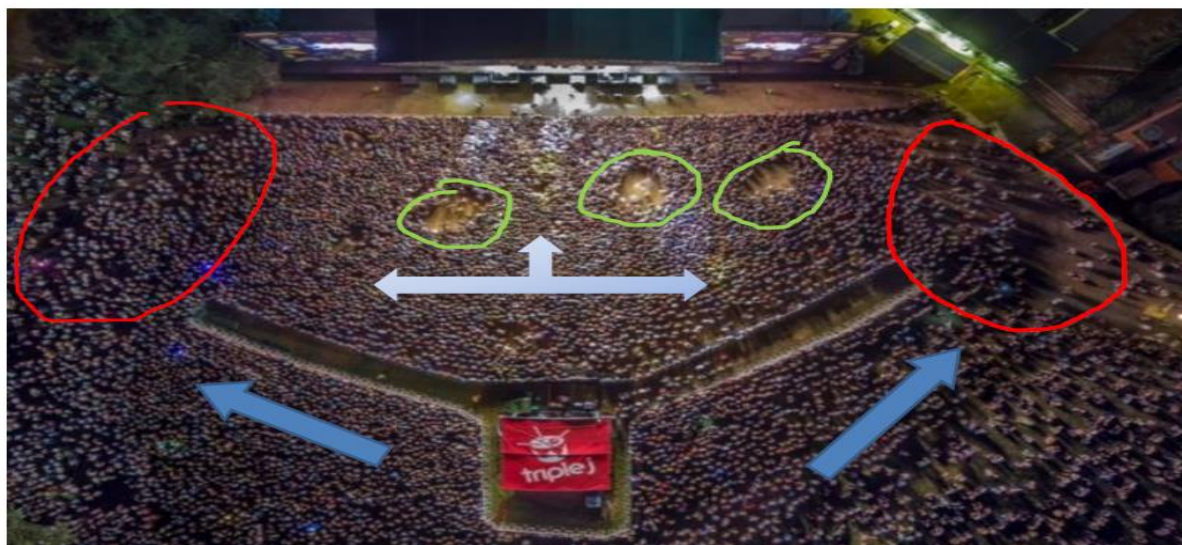


Figure 8: Patrons at SITG 2017 - Amphitheatre

The photograph shows three areas of crowd movement due to “circle work” (green circles) which cause the crowds in Area A to move outward. Despite this movement in a high-density area it can be seen that there is no evidence of pressure at stage left and right (red circles), and densities along the front of house barrier remains relatively low.

The blue arrows indicate the direction that any surge towards the stage generated by the crowds would be directed. As shown, any surge would be directed towards the lower density areas and closer to the emergency break out gates.

⁵ <http://www.hse.gov.uk/event-safety/stage-barriers.htm>

Area B is located behind the front of house and bordered by the middle pathway that runs along the rear of this area. The primary focus for any surge would be down towards the front of house and the barrier system located in this area. The design of the barriers would dissipate pressure laterally, dispersing patron movement into those areas with less density.

Movement away from the front of tower (towards the rear of the amphitheatre) would be less likely and of less impact due to the movement being uphill.

Area C is located uphill from the middle pathway and is separated with a 2.5 metre pathway that allows for patrons to transverse across the face of **Area C** and the rear of **Area B**. Any surge down the hill will naturally move onto the footpath and dispersed left and right. There would also be minimal impact in the unlikely event of a surge up the hill in Area C.

In today's venues the use of areas not designed to hold patrons (football pitches in stadiums commonly known as Field of Play) is a common occurrence and numerous event/festivals have set precedence in allowing greater capacities (and a greater risk for uncontrolled crowd response) for major events;

Such examples are:

- Sydney Showgrounds (Big Day Out/Soundwave/Stereosonic) - 55,000 + Patrons;
- GABBA - Adele - 40,000 + patrons;
- ANZ Stadium (Soundwave/Stereosonic/ACDC/Adele/U2) - 20,000-75,000 + patrons;

In these instances, crowds have been managed within an area that has not been designed for such a purpose, but has been allowed based on the ability to provide the following:

- Additional means of escape;
- Use of appropriate management system in the event of an incident (e.g. show stop or evacuation); and
- Additional infrastructure (to decrease the risk of crush).

The amphitheatre at Parklands provides these mitigation measures as well as a range of management strategies and practices to reduce the potential for crowd surge. These include the following:

- The amphitheatre has 3 distinct areas that are separated from each other therefore reducing the ability for crowds to move into other sections;
- The amphitheatre has primary and secondary barriers that allow for crowd pressures to be dissipated;
- The ability to reduce the number of patrons in specific areas as required; and
- The ability to relieve pressure in the event of surge with the venue providing "spill areas" left and right of the main stage as well as pressure release on the two front stage emergency gates.

Uncontrolled response.

In most cases the primary response by patrons in the event of an incident will be to move away from the source of discomfort or threat. This movement can lead to the potential for crowd surge i.e.

"...Forces are due to pushing, and the domino effect of people leaning against each other. (Still, 2017).

This response to move away from an incident may cause crowd surges that could result in injuries. Currently the application of a "show stop procedure" is the main practice for these uncontrolled responses and has been repeatedly used across the world for festival and events. Australia does not

currently have a formal standard for a “show stop procedure”, even though it was one of the coroner’s recommendations for the Jessica Michalik incident. (Jacqueline Milledge, 2002). It is noted that Splendour and Falls Festival exceed the current expectations and requirements for a show stop with this protocol forming an integral part of both events safety management processes.

Other uncontrolled response may be caused by the following;

- Anti-social behaviour and violence;
- Act of terrorism; and
- Infrastructure collapse.

Mention has been made of the “uncontrollable response due to a flare” by the NSW Police. In 2014 the UK Parliament noted that *“there were 255 incidents involving flares at live music events, both indoor and outdoor”*⁶ with no record of “uncontrollable response” by the crowd namely in the form of crowd surge.

Evidence also points towards the crowd’s acceptance with regards to the use of flares at crowded places and is often considered as part of the experience. An example is the Football Federation of Australia’s current response to flares at the “A” league, with discussions regarding ‘safe flares’ and potential for the FFA to allow specific flares at venues in Australia.

Flares are not permitted at to be used at events at Parklands, and Parklands does not condone their use. Parklands and the event organisers aim to minimise the potential for flares to get into the site. However, a realistic assessment of this risk must be included due to the ability for such items to be smuggled into some events. The following links and photographs provide additional evidence of minimal impact on crowd response with the lighting of a flare.

<https://www.youtube.com/watch?v=Kay7vkDwowg> Sydney Soundwave (ANZ Stadium)

<https://www.youtube.com/watch?v=wkGkRIm84Ig> Sydney Soundwave Sydney Showgrounds-this also set the stage on fire with no issues regarding crowd surge and show stop.

<https://www.youtube.com/watch?v=s8RDS6tHJ3s> Sydney Swedish House Mafia Sydney Showgrounds

<https://www.youtube.com/watch?v=4kpOiUfBzU4>

<https://www.youtube.com/watch?v=WLP6U0iTX2I>

<https://www.youtube.com/watch?v=Eu7Q6CcGOAw>

<https://www.youtube.com/watch?v=DvtmyTTZlts>

<https://www.youtube.com/watch?v=pQIJ4IJyAvY>

<https://www.youtube.com/watch?v=TdZzy5cmzR0>

<https://www.youtube.com/watch?v=hmJuE4JEZcc>

<https://www.youtube.com/watch?v=BpJspoJ7QHs>

⁶ [https://hansard.parliament.uk/commons/2016-04-12/debates/16041234000001/EventsAndFestivals\(ControlOfFlaresFireworksAndSmokeBombsEtc\)](https://hansard.parliament.uk/commons/2016-04-12/debates/16041234000001/EventsAndFestivals(ControlOfFlaresFireworksAndSmokeBombsEtc))

Previous experience in Australia and the release of flares in a festival crowd at the front of stage showed no “uncontrollable response to surge”. The photograph taken at the Soundwave Festival, shows a male who has lit a flare with no evidence of surge.



This photograph shows a hand-held flare lit during the Splendour in the Grass Festival.



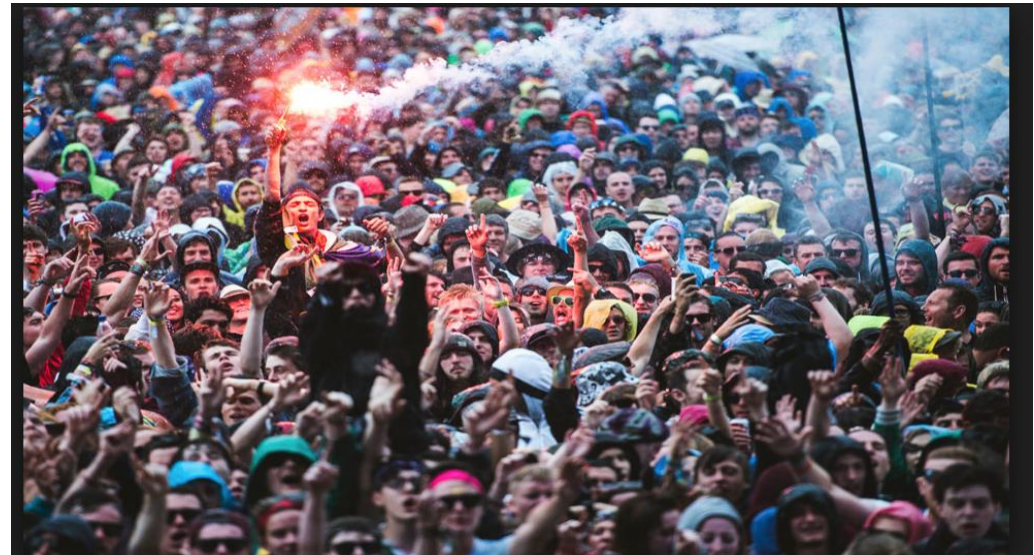
“Event security quickly jumped the barrier, located the flare and extinguished it. The perpetrator was located and handed over to Police. No patrons were injured.”⁷

⁷ <http://musicfeeds.com.au/news/police-praise-well-behaved-splendour-goers-despite-92-drug-arrests-and-multiple-flares/#/slide/1>



Glastonbury 2016 Pyramid Stage 100,000 Pax

Perth Falls Festival 2018



Crush.

The issue of crowd crush is often due the mismanagement of patron capacities resulting in areas becoming over crowded.

The ability for the amphitheatre to be closed down as this area becomes full allows the event operators to control patron densities in specific areas and remove the potential for crowd crush incidents. The provision of break out gates and access to open space in potentially higher density areas allows for pressure to be relieved if necessary, specifically at the front of stage, removing the potential for crowd crush.

Examples of available operational mitigation during the course of a festival include the opening of the “Blue exit” stage right (prior to last 2 songs) of a headline act. This reduces the potential for crowd pressure in this location or building up to the Red gate (pathway running parallel to the stage).

“An example of the response to a potential crowd crush incident occurred at Splendour 2018 when, due to popularity of the artist “STORMZY”, increased numbers attended the Big Top, with a number starting to climb the tent infrastructure. A show stop was put in place, the artist assisted in asking patrons to climb down, which they complied with. Additional security was located around certain speaker arrays and the artist continued with no further incidents and took place and prior to Police attending.”⁸

Safety Evacuation and the Impact of Intoxication

The loss of cognitive skills by individuals during an evacuation (whether this is due to alcohol/drugs or the ability for an individual to manage requirements to evacuate) is noted in the Police submission.

This issue is not specific to Parklands and occurs at other festivals and events across Australia where in many cases the venues and sites would not be deemed as built for purpose. In such cases they have been adapted to provide additional resources/mitigation to assist in the event of an emergency situation. Examples are provided below.

Bathurst V8's.

“NSW Police enforce alcohol restrictions at Mount Panorama during Bathurst 1000. Operation Mawson has been launched to ensure the safety and security of more than 200,000 people expected to descend on Mount Panorama, including competitors, officials and spectators over the four-day event.”⁹

Alcohol Limits for Bathurst campgrounds (Taken from V8 Website)¹⁰

Alcohol limits for the 2017 Supercar Auto Bathurst 1000 campgrounds are as follows per person per day:

- (a) One (1) x carton of full strength beer or full strength premixed drinks in cans only (24 can), or
- (b) One (1) x carton of mid strength beer (30 cans), or
- (c) One (1) x cask of wine, or
- (d) One (1) x 750ml bottle of spirits (Plastic only)

⁸ Jim Fidler (Author) Attended as the Response Manager and instigated the showstop procedure.

⁹ <https://www.westernadvocate.com.au/story/4213473/alcohol-restrictions-in-place-over-bathurst-1000-weekend/>

¹⁰ <https://d3spxwpngnho1k.cloudfront.net/wp-content/uploads/BATHURST-CAMPING-FAQ-TCS3.pdf>

The ability to evacuate patrons from any licensed venue in Australia will face the same issues as indicated by the NSW Police in their submission. Management of the sale of alcohol and the responsible service of alcohol is maintained in conjunction with the local licensee and includes a consultative process that aims to implement of best practise.

The identified loss of cognitive skills for those who may be impaired by alcohol or drugs can be mitigated against with the introduction of additional elements of best practise as well as additional resources that exceed those events that have far greater numbers of patrons and fewer mitigation practices and systems in place.

This increase in information will take the form of improved signage and directional information, improved lighting and the ability to respond to providing additional lighting in the event of an incident.

- Education of those attending with regards to the effects of alcohol and drugs as well as “looking” after mates;
- The provision of increased signage in and location markers in the campgrounds allows for improved response to incidents as well as providing patrons with a constant location marker;
- Increased education on social media with regards to patron support in the event of an incident;
- Engagement with Police and other stakeholders with regards to the Alcohol Management and the education of patron “*in for the long run*”....No Binge Drinking.
- Increase searches of the Campgrounds for secondary consumption-alcohol brought into the event and hidden in tents;
- The ability to access alternate sources of communication such as the stage PA equipment “inform people” (Drury, 2015);
- Introduction of the ‘Time Out’ system for those who may be in need and the welfare management system that will be introduced in 2018; and
- Improved marking of the amphitheatre pathways for emergency services to allow for improved response.

It is accepted that there needs to be an additional level of response with regards to any potential evacuation/invacuation of the site. The use of support personnel in the event of an incident to support the evacuation/invacuation has been identified as a mitigation strategy

For the purposes of the assessment this team has been referred to as the “Pink Team” and will consist of those members of the staff namely the peer support team and key site staff.

In the event of an emergency, members of the Pink team currently have no specific roles within overall emergency plans. However, this team will now be assigned the responsibility of locating and managing persons affected through alcohol/drugs in the event of an evacuation. The primary areas of their search will include event areas and the campgrounds.

Monitor, Limit and Manage.

In the police submission the following 3 elements have been identified and used to address the issues raised, these being monitor, limit and manage patrons attending an event. In order that the concerns raised in the submission are addressed, mitigation strategies and practices have been listed in Table 6. Additional elements may be included at a later date. However, the table should be viewed as a “living Template” allowing for Parklands’ management to address any future concerns based on the 3 concepts noted in the police submission.

Table 6: Monitor, Limit and Manage Strategies - Amphitheatre

Monitor.	Limit	Manage
The monitoring of the amphitheatre is based on predetermined trigger points as defined: <i>“Trigger points based on crowd considerations may be used to identify when escalation of management plans....”</i> (Resilience, 2018, p. 88) Example of which being: • Density; • alcohol and intoxication, prevention may include mid-strength as opposed to full strength alcohol; • end of the event, or half-time; and • set lists, e.g. when stages close” (Resilience, 2018, pp. 88-89). In some instances, such as the serving of alcohol these are already implemented in by way of the alcohol management plan: • The event is ticketed only allowing a predetermined number of patrons to attend the event; • A dedicated amphitheatre manager is provided for the duration of the event that is experienced with managing crowded places;	Ability to redirect patrons into areas of the venue that have reached an acceptable/expected (audience) level of comfort. • Closure of the ingress routes (Red and Green) that removes the ability for patrons to fill up directly into area A; • Introduction of the “Long Walk” involving a closure of the ingress routes into the lower part of the amphitheatre and the redirection of patron back over the hill; • The Check point known as ‘Mals gate” allows for either patrons to flow into the hatching area or to be directed towards the ‘Pink” route to allow continual fill of the areas B and C. • Crowd movement from the rear of area A is limited due to the secondary barrier preventing surge movement towards the front of the stage; • “Fill areas” are present in the site design due to the lack of viewing of the stage. This discourages patrons from using these areas and by default becomes an area for crowds to disperse in the event of a surge;	A wholistic approach for the management of the amphitheatre and patrons allows for specific areas to be filled up according to the capacity of the areas; The area is managed with a dedicated amphitheatre manager along with a dedicated team of security with the ability for additional resources to be directed to the area if required; In looking at the management of the area it is essential that normal and Emergency operations are considered. NORMAL Operations: The amphitheatre is designed so that the movement of patrons into the area can be directed to “backfill” specific areas and the potential for overcrowding in certain areas (e.g. front of stage) is removed. External to the amphitheatre is the ability to close off the approach to the lower entrances and the redirection of patrons to the ‘long Walk” and the rear of the venue. The amphitheatre has an adequate walkway that traverses the area that allows for patron movement as well as services.

Monitor.	Limit	Manage
• Additional security resources allocated for the amphitheatre specifically; • CCTV available for the event that allows for a wholistic view of the whole site-this provides a capability to monitor crowd movement towards (or in some cases away from the amphitheatre); • Social media monitoring during the event which provides information of patron's intent to attend the various stages, which in turn allows for pre-emptive planning; • Introduction of RAG (Red-Amber-Green) assessments daily for the event for pre-emptive planning or mitigation; • Stakeholder meetings during the course of operational hours to assess any potential concerns or issues; • Combined event control room for the duration of the event allowing for the integration of event stakeholders; • Additional human resources allocated to the amphitheatre and to be reassessed continually based on the RAG document;	Scheduling of the artists allows for the event to manage the "attraction" of patrons to attend the amphitheatre. This may include the following: • Different Music genres for the other stages etc; • Timing of other stages to conclude at predetermined finish times removing the ability for patrons to converge towards the amphitheatre; and • Alternative entertainment provided during the course of the main act at the amphitheatre, these being the likes of the "destination" bars. Best practice design of the primary and secondary barriers that include curved structures which allows for dissipation of surge forces against the barriers. Surge is limited due to the implementation of front of stage barriers and secondary; Crowd momentum reduced in the event of a surge due to the breakup of the amphitheatre into areas limiting capacity; Ability to remain in Location/Holding (HIDE) (Commonwealth Government-Armed Offender, 2017);	Appropriate signage to provide information to patrons. Ability to use stage video screen for messaging. Venue lockdown procedure documented. EMERGENCY Operations. Additional space to allow for patrons to move into in the event of crowd movement (specifically stage right and stage Left). Break out gates allocate stage right (new) and stage left (increased) in the event that pressure needs to be released in the front of stage area. • BLUE gate this is located stage right and will run alongside the stage-this gate is an EXIT ONLY and will be used at the end of any act that the amphitheatre manager deems necessary. This gate will allow for emergency services direct access into the Front of stage area if needed. • YELLOW gate is located stage left and has been increased in width allowing for greater egress capacity-this gate is only to be used in case of Emergency. <i>Ability to clear the amphitheatre;</i> • The egress from the amphitheatre can be managed either in specific areas or as a whole (egress calculations) <i>Access for Emergency Services.</i>

Monitor.	Limit	Manage
• Historical evidence to be researched for each artist with regards to previous history at events or previous crowd issues; • Assessment for artists attending the festival allows for potential mitigation strategies to be implemented prior to doors opening if needed; and • Engagement of qualified Crowd Mangers for the duration of the festival who hold formal qualification and operational experience in managing crowded place.	The nature of the ingress/egress routes allows for the venue to be locked down by police in the event of an incident and provide the festival with the ability to manage either the ingress/egress routes.	The amphitheatre has the following access pint that allow for access into the following areas. • Blue and Yellow Gate - Direct access into the front of stage area and front of house locations. • Yellow and Orange Gates - Access to upper and lower area of the amphitheatre. • Red and Green Gates - Access into the front of house area and Area B. • Long walk Via Mal's gate allows for access into Areas B and C. Communication in an Emergency. • Stage screens a have the ability to display predetermined messaging that can display egress routes and other communications. • Ability to provide social media messaging. • Show stop procedure is in place and is a contractual requirement Artist - Show stop (Jacqueline Milledge, 2002) allows for the following: ○ Direct Access to Stage PA system ○ Access to available lighting in the amphitheatre. ○ Direct Messaging to the Audience.

Conclusion and Recommendations.

The key components of the Crowd Management concerns raised in the Police submission are based around the actual numbers that are allowed for the event and the concerns that this increase in numbers adds additional risks, namely Crowd Crush/Crowd Surge and inability to evacuate patrons from the event site.

In addressing each of the concerns raised this document has identified current mitigation strategies as well additional control measures so as to address these concerns. These strategies and mitigation measures are based around the police stated elements of monitor, limit and manage.

In looking at the proposed capacity increases for the venue, the amphitheatre has been the prime focus based on the fact that this area is currently used as the mainstage and will attract all the patrons.

However, such an assumption does not take into account patron numbers that would be located elsewhere in the venue including:

- The Mix Up stage (capacity of 7,500 patrons);
- The GW Stage (capacity of 4,000 patrons);
- The Tiny Dancer stage (capacity of 2,500 patrons)
- Patrons in the campground; and
- Patrons in destination bars and food vendor stalls, etc.

In the calculations provided it has been shown that the proposed gradual increase for the Splendour event will be able to be accommodated in the amphitheatre.

The aspects of ‘crowd crush’ and ‘crowd surge’ as raised in the police submission have been considered and with additional mitigation measures being proposed, the risk of such incidents will be greatly reduced.

The ability to egress patrons in a timely fashion from the amphitheatre has been shown as possible based on several differing egress rates. These calculations have been based on a maximum patron capacity inside the amphitheatre of 32,500, 42,500 and 50,000 without taking into account that patron numbers would be lower for this area due to patrons attending other parts of the venue. The reduction in patron numbers inside the amphitheatre will further increase the egress rate.

Management of patrons during any incident that requires an evacuation who may be affected due to intoxication or substance use has been raised in the police submission. Additional mitigation measures are recommended to address this aspect. It should be noted that Falls Festival and Splendour have harm minimisation practices that far exceed what is required and would be considered as best practice patron care and management in Australia.

Tables 7 provide a summary of the current and proposed mitigation strategies for the 3 proposed capacity increases. These have again been based around the concepts provided in the police submission of monitor, limit and manage.

Table 7: Monitor, Limit and Manage Recommendations - Amphitheatre

Amphitheatre 35,000 Pax Supported.		
Planning	Current Mitigation and Strategies	Additional Mitigation required.
1. Introduction of RAG (Red-Amber-Green) assessments daily for the event for pre-emptive planning or mitigation. 2. Assessment for artists attending the festival dynamics) allows for the potential mitigation strategies to be implemented prior to doors opening if needed. 3. Venue lockdown procedure documented 4. Define the trigger points for closures/redirection	1. A dedicated amphitheatre manager is provided for the duration of the event that is experienced with managing crowded places. 2. Additional security resources allocated for the amphitheatre specifically. 3. CCTV available for the event that allows for a wholistic view of the whole site-this provides a capability to monitor crowd movement towards (or in some cases away from the amphitheatre). 4. Combined event control centre for the duration of the event allowing for the integration of the event stakeholders. 5. User pay Police. 6. Stage screens a have the ability to display predetermined messaging that can display egress routes and other communications. 7. Ability to provide social media messaging. 8. Show stop procedure is in place and is a contractual requirement artist-show stop 9. Direct access to stage PA system 10. Access to available lighting in the amphitheatre. 11. Direct messaging to the audience.	1. Additional human resources allocated for the amphitheatre and to be reassessed continually based on the RAG document. 2. Engagement of qualified crowd managers for the duration of the festival who hold formal qualification and operational experience in managing crowded places. 3. BLUE gate to implemented. Located Stage Right and will run alongside the stage. This Gate is an EXIT ONLY and will be used at the end of any act that the amphitheatre manager deems necessary. This gate will allow for emergency services direct access into the Front of stage area if needed. 4. YELLOW gate is located Stage left and has been increased in width allowing for greater egress capacity. This gate is only to be used in case of emergency.

Amphitheatre 42,500 Pax Supported		
Planning	Current Mitigation and Strategies	Additional Mitigation required.
1. Introduction of RAG (Red-Amber-Green) Assessments daily for the event for pre-emptive planning or mitigation. 2. Assessment for artists attending the festival dynamics) allows for the potential mitigation strategies to be implemented prior to doors opening if needed. 3. Venue lockdown procedure documented 4. Define the trigger points for closures/redirection	1. A dedicated amphitheatre manager is provided for the duration of the event that is experienced with managing crowded places. 2. Additional security resources allocated for the amphitheatre specifically. 3. CCTV available for the event that allows for a wholistic view of the whole site-this provides a capability to monitor crowd movement towards (or in some cases away from the amphitheatre). 4. Combined event control centre for the duration of the event allowing for the integration of the event stakeholders. 5. User pay Police. 6. Stage screens a have the ability to display predetermined messaging that can display egress routes and other communications. 7. Ability to provide social media messaging. 8. Show stop procedure is in place and is a contractual requirement artist-show stop 9. Direct access to stage PA system 10. Access to available lighting in the amphitheatre. 11. Direct messaging to the audience.	1. Additional human resources allocated for the amphitheatre and to be reassessed continually based on the RAG document. 2. Engagement of qualified crowd managers for the duration of the festival who hold formal qualification and operational experience in managing crowded places. 3. BLUE gate to implemented. Located Stage Right and will run alongside the stage. This Gate is an EXIT ONLY and will be used at the end of any act that the amphitheatre manager deems necessary. This gate will allow for emergency services direct access into the Front of stage area if needed. 4. YELLOW gate is located Stage left and has been increased in width allowing for greater egress capacity. This gate is only to be used in case of emergency. <u>Additional to 35000</u> 5. Mainstage is to be moved back and so increase the capacity of the hardstand. 6. New pathway (Pink to be introduced)

Amphitheatre 50,000 Conditionally supported		
Planning	Current Mitigation and Strategies	Additional Mitigation required.
1. Introduction of RAG (Red-Amber-Green) assessments daily for the event for pre-emptive planning or mitigation. 2. Assessment for artists attending the festival dynamics) allows for the potential mitigation strategies to be implemented prior to doors opening if needed. 3. Venue lockdown procedure documented 4. Define the trigger points for closures/redirection	1. A dedicated amphitheatre manager is provided for the duration of the event that is experienced with managing Crowded Places. 2. Additional security resources allocated for the amphitheatre specifically. 3. CCTV available for the event that allows for a wholistic view of the whole site-this provides a capability to monitor crowd movement towards (or in some cases away from the amphitheatre). 4. Combined event control centre for the duration of the event allowing for the integration of the event stakeholders. 5. User pay Police. 6. Stage screens a have the ability to display predetermined messaging that can display egress routes and other communications. 7. Ability to provide social media messaging. 8. Show stop procedure is in place and is a contractual requirement artist-show stop 9. Direct access to stage PA system 10. Access to available lighting in the amphitheatre. 11. Direct messaging to the audience.	1. Additional human resources allocated for the amphitheatre and to be reassessed continually based on the RAG document. 2. Engagement of qualified crowd managers for the duration of the festival who hold formal qualification and operational experience in managing crowded places. 3. BLUE gate to implemented. Located Stage Right and will run alongside the stage. This Gate is an EXIT ONLY and will be used at the end of any act that the amphitheatre manager deems necessary. This gate will allow for emergency services direct access into the Front of stage area if needed. 4. YELLOW gate is located Stage left and has been increased in width allowing for greater egress capacity. This gate is only to be used in case of emergency. 5. Mainstage is to be moved back and so increase the capacity of the hardstand. 6. New pathway (Pink to be introduced) Additional to 42,500 7. Additional pathways (sealed) at the rear of the Amphitheatre (Area C). 8. Stakeholder engagement as to the lesson(s) learned over the Gradual increase in capacity for the Amphitheatre. 9. The identification and assessment of an alternative main stage (out of the Amphitheatre) based on any concerns/issues due to the gradual increase in patron numbers.
Consideration I. As the site increases consider factors that may play a role in the density of the lower sections such as: II. The stage moving back may cause an increase in patrons moving down onto the hardstand and so increase the density (this can cope with 42,500) III. Patrons from Area B moving towards the Area A due to better vantage point (distance) so causing density increase on the secondary barrier. IV. Potential for patrons to move towards the lower walkways as a viewing platform as will be viewed as a prime viewing spot. V. Negative Patron experience due to the increase in patron density on the hardstand. VI. Potential for the main stage to move to another area of the event that would be better suited in servicing the proposed attendees.		

Conclusion and Recommendations.

This assessment:

1. Supports the current event capacity of 35,000 patrons based on the recommendations and mitigation measures provided in Table 7 on page 32.
2. Supports the increase in capacity to 42,500 patrons based on the recommendations and mitigation measures provided in Table 7 page 33.
3. Conditionally supports the increase in capacity to 50,000 patrons using the amphitheatre based on the recommendations and mitigation provided in Table 7 page 34. The increase to 50,000 patrons should take into consideration the following:
 - How the gradual increase in numbers will affect the site and what additional mitigation/infrastructure will be required outside of the amphitheatre.
 - Lessons learned from the gradual increase in numbers within the amphitheatre and the event site in general.
 - Event Safety Committee to be informed and consulted.
4. Supports the increase in capacity to 50,000 patrons if the main stage is located to a flat area such as the existing Mix Up stage based on the applicable recommendations and mitigation measures provided in Table 7 page 34.

The Australian Institute for Disaster Resilience, Safe and Healthy crowded places (2018) has adapted Fruin's definition and has applied it into the current updated release of Safe and Healthy Crowded Places - "Crowd management is a proactive approach to manage attendees' expectations, minimise the potential for overcapacity and to provide a systematic approach to elements of crowd movement" (Resilience, 2018, p. 82). In my opinion Splendour and Falls Festival and North Byron Parklands are at the forefront of major event management in Australia and based on their proactive approach to crowd management, their willingness to adapt and seek best practice should be applauded within the industry.



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Attachments

2 Pax Per Square metre

3 Pax Per square metre

4 Pax Per Square metre

5 Pax Per square metre

2 Patrons Per Square Metre



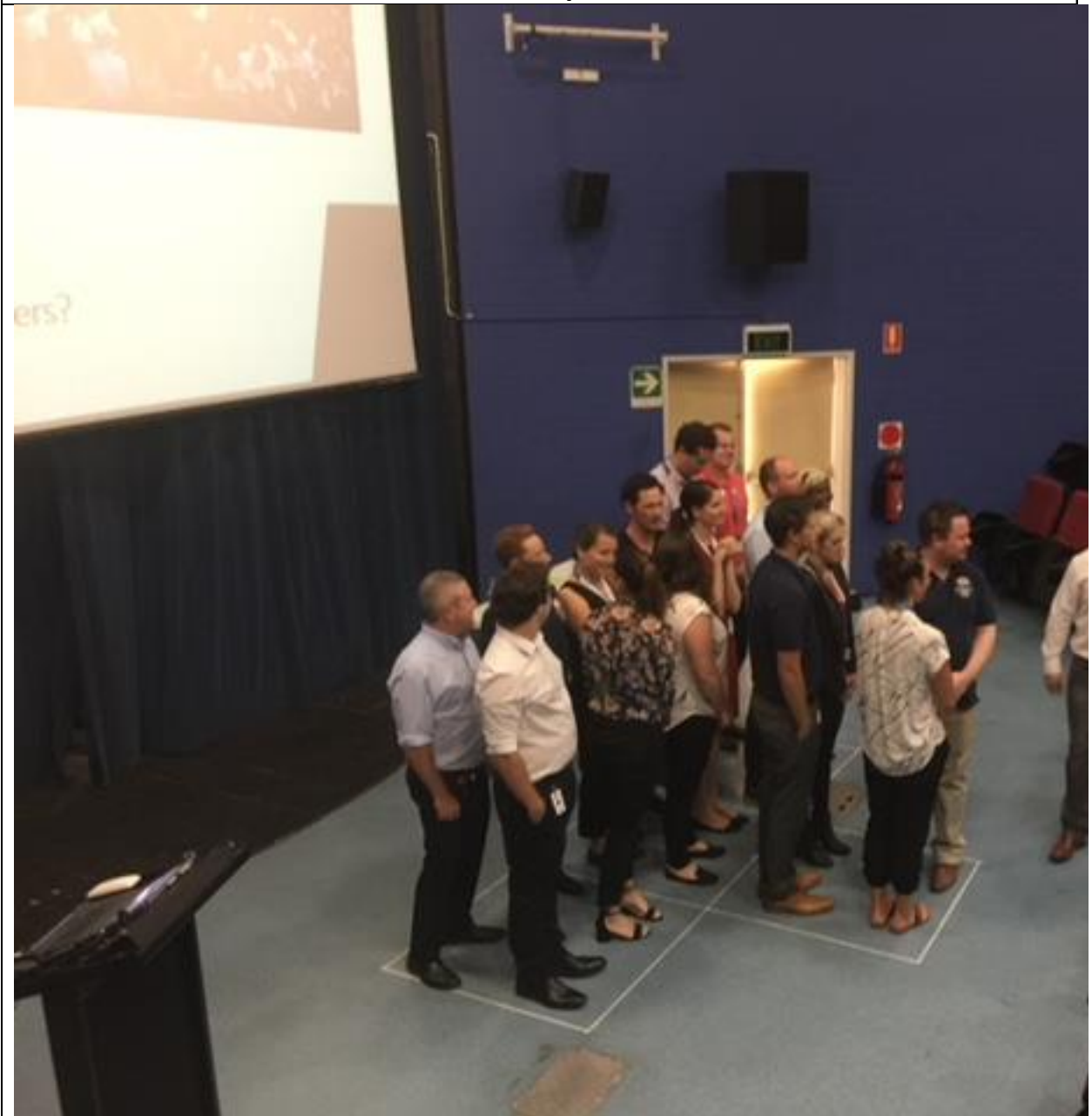
*Picture Taken Commonwealth Games Gold Coast Venue Manager Training 2018-Crowd Risk
@Jim Fidler & Robbie Naish*

3 Patrons Per Square Metre



*Picture Taken Commonwealth Games Gold Coast Venue Manager Training 2018-Crowd Risk
@Jim Fidler & Robbie Naish*

4 Patrons Per Square Metre



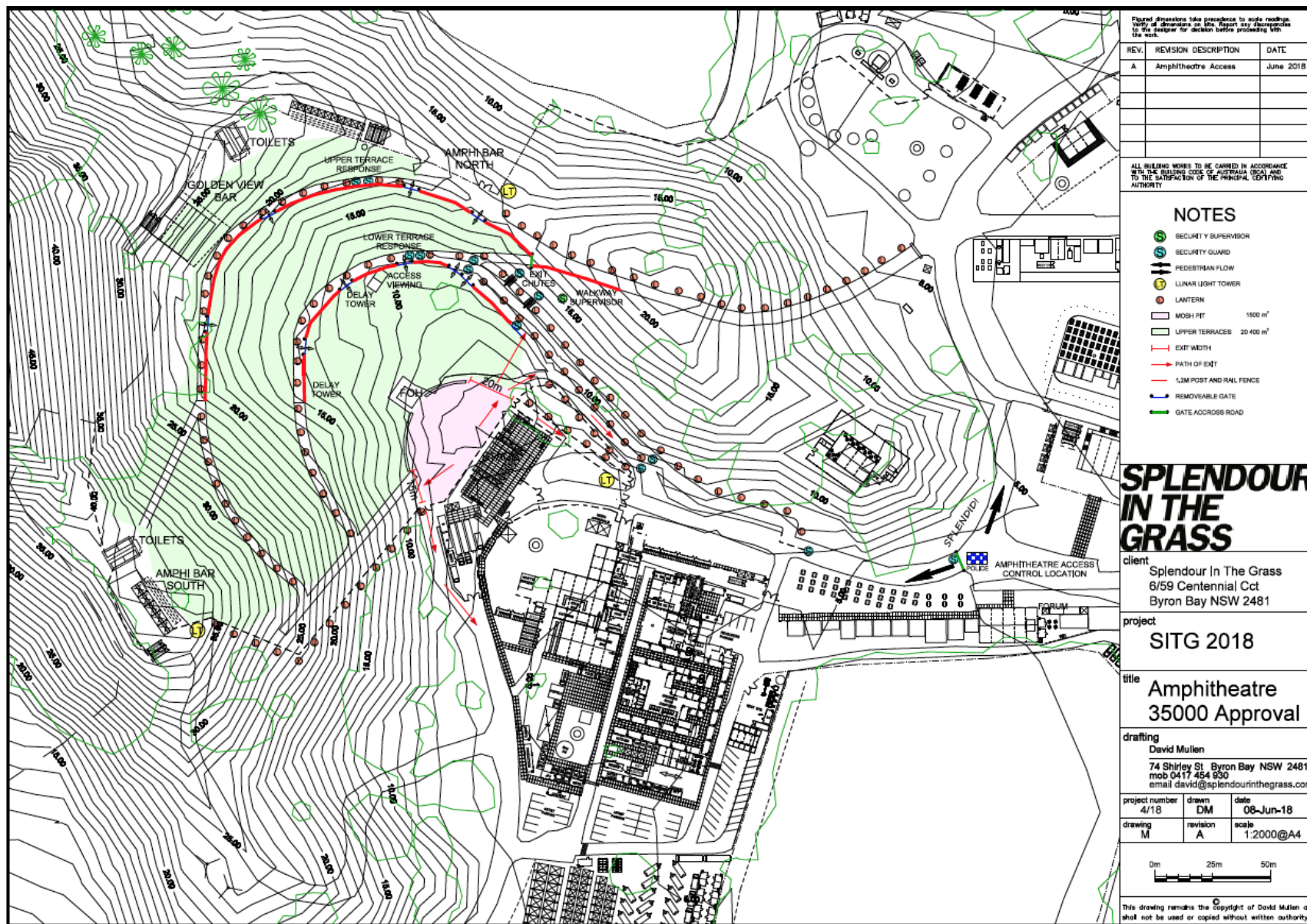
*Picture Taken Commonwealth Games Gold Coast Venue Manager Training 2018-Crowd Risk
@Jim Fidler & Robbie Naish*

5 Patrons Per Square Metre



*Picture Taken Commonwealth Games Gold Coast Venue Manager Training 2018-Crowd Risk
@Jim Fidler & Robbie Naish*

Appendix B – 35,000 Patrons - Amphitheatre



Figured dimensions take precedence to note readings, and if dimensions on site, they are those reported to the designer for decision before proceeding with the work.

REV.	REVISION DESCRIPTION	DATE
A	Amphitheatre Access	June 2018

ALL BUILDING WORKS TO BE CARRIED IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA (BCA) AND TO THE SATISFACTION OF THE PRINCIPAL CERTIFYING AUTHORITY

NOTES

- SECURITY SUPERVISOR
- SECURITY GUARD
- PEDESTRIAN FLOW
- LUNAR LIGHT TOWER
- LANTERN
- MOSH PIT 1500 m²
- UPPER TERRACES 20,400 m²
- EXIT WIDTH
- PATH OF EXIT
- 1.2M POST AND RAIL FENCE
- REMOVABLE GATE
- GATE ACROSS ROAD

SPLENDOUR IN THE GRASS

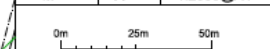
client
Splendour In The Grass
6/59 Centennial Cct
Byron Bay NSW 2481

project
SITG 2018

title
Amphitheatre
35000 Approval

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project number 4/18	drawn DM	date 08-Jun-18
drawing M	revision A	scale 1:2000@A4



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Appendix C – 42,500 Patrons – Amphitheatre

