



TRAFFIC MANAGEMENT PLAN

**Bluesfest 2023
Tyagarah, NSW**

For: Bluesfest Byron Bay Pty Ltd
Report no: 23000-TMP-A
Date: 19-Jan-23



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1.0 Introduction

1.1 Event Description & Calendar

Bluesfest is a 5-day blues and roots Australian music festival that is held at the Byron Events Farm in Byron Bay region of NSW. Bluesfest is held over the Easter long weekend. Although the actual music portion of the festival spans from Thursday to Monday, campers are allowed to arrive at the festival on Wednesday prior and leave the site on Tuesday following the festival.

The 2023 Bluesfest event calendar can be summarised as follows:

Wednesday 5 th April 2023	Campgrounds open/camper arrivals
Thursday 6 th April 2023	Event Day 1
Friday 7 th April 2023	Event Day 2
Saturday 8 th April 2023	Event Day 3
Sunday 9 th April 2023	Event Day 4
Monday 10 th April 2023	Event Day 5
Tuesday 11 th April 2023	Campgrounds close/camper departure

1.2 Scope of Works

Greg Alderson & Associates (GAA) have been engaged by Bluesfest Byron Bay Pty Ltd to provide a Traffic Management Plan (TMP) for the 2023 Bluesfest event at the Byron Events Farm in Tyagarah, NSW.

The primary function of this TMP is to prescribe traffic management and control procedures, including a Traffic Guidance Scheme (TGS) for Bluesfest 2023 to ensure the safety of both the general public and staff throughout the event and to satisfy the conditions of consent for the festival. This TMP will focus on the main aspects of the project that will affect public road users.

1.3 Site Locality

The subject site is formally known as Lots 103, 104, 105 DP 1023126, Tanner Lane, Tyagarah. The location of the site with respect to its locality is shown in Figure 1, while the site access plan is shown in Figure 2.

As seen in Figure 2, the site has two main entries: Access 1, which is the northernmost entry typically for vehicles travelling southbound on the Pacific Motorway; and Access 3, which is the southernmost entry typically reserved for vehicles travelling northbound on the Pacific Motorway. Access 1 is also used as an exit for vehicles on the north of the site while Access 4 is used as an

exit for vehicles on the south of the site. Access 2 is reserved for emergency vehicles and festival organisers.

As also indicated in Figure 2, a special off-ramp from the Pacific Motorway onto Tanner Lane is used throughout the festival to minimise conflict points and streamline traffic entering the site.

The Bluesfest 2023 site map is included as Appendix A of this report while the TGS for the event is included as Appendix B of this report.

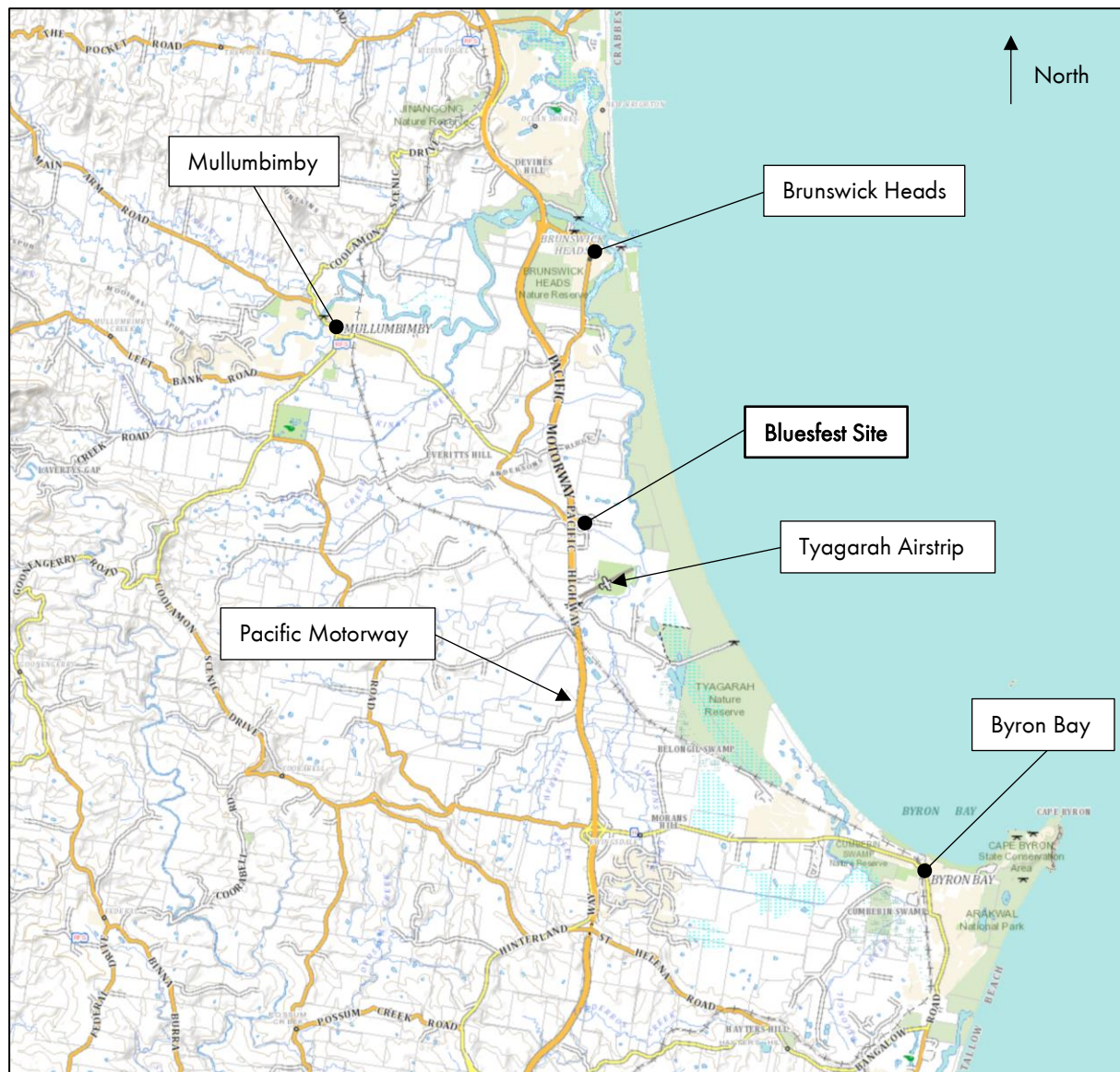


Figure 1 – Site locality (SIX Maps, 2023)



Figure 2 – Site access plan

1.4 Standards, Specifications & Guidelines

This TMP has been prepared in accordance with the following standards, specifications and guidelines:

- Guide to Traffic and Transport Management for Special Events Version 3.5;
- Transport for NSW (TfNSW) Traffic Control at Worksites Technical Manual (TCWS) Version 6.1;
- Australian Standards (AS1742 in particular);
- Quality Assurance specifications;
- Austroads Guide to Traffic Management.

1.5 Summary of Key Performance Indicators (KPIs)

The modified consent DA 10.2014.753.7 provides a set of Key Performance Indicators (KPIs) that were created to ensure acceptable traffic conditions on the public road during the event. The consent condition from this modified consent stipulating the traffic KPIs is shown below in consent condition 61:

Consent Condition 61

- b) The Traffic Control Plan (TCP) [also known as TGS] must address the following matters:
 - v. There is to be no impact on through travel times on the Pacific Highway.
 - xiii. The TCP is to factor in that local roads are to operate a Level of Service (LoS) D or better between the hours of 8am and 8pm on event days. The ramps of the Tyagarah Interchange with the Pacific Highway to operate at Level of Service C or better at event times (See Figure 3.1 Levels of Service Flow rates Austroads Guide to Traffic Management Part 3 and Highway Capacity Manual).
 - xiv. The TCP is to include provision so that traffic queuing on the Gulgan Road off-ramps do not exceed stopping sight distances for 110 km/h speeds (see RMS supplements and Austroads Guide to road Design Part 3 Section 5.3.1 for stopping sight distances).

Based on consent condition 61 shown above, the KPIs for the Bluesfest 2023 event are summarised as follows:

1. No queuing or impact in through travel times on the Pacific Motorway.
2. The requirement for local roads to operate a LoS D or better between the hours of 8am and 8pm on event days can be measured by ensuring traffic flow rates do not exceed the following flow rates:
 - a. 800 vehicles per hour per lane when 40 km/h special event speed limits apply
 - b. 1,260 vehicles per hour per lane when 60 km/h special event speed limits apply
3. The requirement for the Gulgan Road off-ramps to operate at LoS C or better at event times can be satisfied by ensuring the average delay on the off-ramps is less than or equal to 42 seconds.
4. Traffic queuing on the Tyagarah Interchange off-ramps must not exceed stopping sight distance for 110 km/h speeds as follows:
 - a. Maximum back of queue location on northbound off-ramp: 200 metres from start of diverge taper.
 - b. Maximum back of queue location on southbound off-ramp: 210 metres from start of diverge taper.

Any traffic incidents resulting in non-compliance with any of the above conditions will have serious consequences for future events at this site. It is important that at all times, sufficient qualified staff is

available to implement the traffic management plan including any contingencies. It is required that all traffic controllers are properly briefed giving them an appreciation of the bigger picture of the traffic management plan and an understanding of the impact that their specific role may have on the overall performance of the festival.

Of equal importance in the compliance with the above specifications is that there are no restrictions within the site which cause a queue of traffic back out the entrance gates onto Tanner Lane or Yarun Road.

1.6 Definitions

AADT	Average Annual Daily Traffic; average traffic volume per day after application of correction factors
ADT	Average Daily Traffic; average traffic volume per day, based on a limited survey period, typically 1 week
Background Traffic	Traffic composition as would typically exist without superposition of event traffic
BEF	Byron Events Farm
BSC	Byron Shire Council
Heavy Vehicle	For the purposes of this report; anything other than a pedestrian, cyclist, motorbike or car
KPI	Key Performance Indicator; as defined in the conditions of consent for the development
LoS	Level of Service; Service level of roads based on certain traffic statistics as defined in other documents
Peak Flow Rate	Hourly volume of vehicles during busiest part of assessment period
TfNSW	Transport for NSW (previously known as RMS)
TGS	Traffic Guidance Scheme
TMP	Traffic Management Plan

2.0 Traffic Control at Tyagarah Interchange & Bluesfest Southbound Off-ramp

2.1 Main Purpose

The main priorities of the traffic control measures at the Tyagarah Interchange are:

- No queuing onto the Pacific Highway off-ramps;
- No interruption of through traffic on the Pacific Highway;
- Limit delay for local traffic on local roads.

The TGS detailing the required traffic control measures are prepared by Altus Road Services and adopted by Council. These plans form the statutory controls for traffic management on the public roads adjacent to the event site and along with the Road Occupancy License issued by the TfNSW serve to give the necessary authority to the traffic controllers to implement traffic management on and off the site. A set of the approved TGS will be issued to all stakeholders.

2.2 General Layout

The TGS shows signage, barriers and other traffic control measures to offer a managed environment around the Bluesfest site.

Southbound motorway traffic seeking to attend the festival will be directed by signage to take the off-ramp, completed by Bluesfest, and proceed directly without interruption to their parking areas, situated in the north of the event site.

Event traffic from the south will be directed by signage to exit the Pacific Highway at the existing Mullumbimby off-ramp. This traffic will cross the motorway using the existing Tyagarah Interchange overpass. Then they travel south to the site entrance gate and park in the southern car parking areas. Event traffic from the north will use the newly constructed off-ramp which will lead them straight into the site to park in the northern car parks.

Thus, vehicles from either direction will be kept separate to reduce on-site congestion during both arrival and departure times. The Grays Lane intersection has been closed by TfNSW in 2019 and 2022 with normal access now via the interchange and Yarun Road. During Bluesfest 2019 and 2022, TfNSW opened the access from Grays Lane to the motorway for the duration of the event.

Observers will be required at the Tyagarah Interchange overpass and the Pacific Motorway southbound off-ramp during peak arrival periods throughout the festival. These observers will be required to give advice to the traffic controllers as to the length of any significant queue. Adjustments may then be necessary on the site to give increased priority and avoid queues back to the highway.

The TfNSW Traffic Management Centre shall be notified immediately of any risk of queueing impacting the highway.

2.3 Traffic Controllers on Off-ramps

Traffic controllers will not be placed on the off-ramps. These ramps are intended to operate without the need for traffic controllers. It is noted that requirements above to monitor traffic at off-ramps and across the interchange.

2.4 Traffic Controllers

Traffic controllers shall be implemented as shown on the approved TGS and as directed by the traffic supervisor. Generally, traffic controllers are provided:

- At the north and south site entrances/ exits to direct traffic into/ out of the site;
- At the service station intersection at peak times to manage traffic flow at the intersection so that Level of Service is maintained for vehicle flow/ delay control and to maintain road safety;
- At the interchange to observe and provide immediate feedback regarding any queueing incidents.

All traffic controllers (TCs) are to be TfNSW certified controllers with two-way radios as required. Traffic controllers are not to verbally communicate with drivers of vehicles other than to move them through quickly. Any traffic controllers found causing delays by having conversations with drivers are to be replaced immediately after reasonable warning.

The traffic control supervisor and parking supervisor are to liaise closely with each other before and during the festival. The supervising traffic engineer will also liaise with these two supervisors and other parties (such as TfNSW, Council, Bluesfest Management, NSW Police Force, the public, etc.) as required to ensure efficient operation overall. The operation of the traffic management is a team effort and regular coordination meetings will be held with all relevant stakeholder personnel.

2.5 Traffic Guidance Scheme (TGS)

The TGS aims to minimise the impact of traffic control on all road users and encourage patrons to enter and exit the site in a safe and efficient manner.

The implementation of traffic management arrangements shall be done in accordance with the TfNSW Traffic Control at Worksites Technical Manual (TCWS) Version 6.1, AS1742.3 and traffic control sub-contractor safe work procedures. Only those personnel who are competent for the task shall be engaged in the implementation of traffic management arrangements. The approved TGS to be implemented in this event are included in the Event Management Plan.

2.6 Traffic Control Implementation

The Bluesfest 2023 event is from Thursday 6th April to Monday 10th April 2023. The traffic management for the event including pre-event site establishment and site close down will be as per the approved TGS (see Appendix B of this report) as follows:

2.6.1 Wednesday 29th March

- Installation of no stopping signs at 75m maximum spacing along Gulgan Rd to Mullumbimby Rd.
- Installation of static signage on Gulgan Rd roundabout directing people to festival entrance.

2.6.2 Thursday 30th March to Friday 1st April

- Two VMS boards to be installed on the Pacific Highway for northbound and southbound approaches stating "Bluesfest Exit 4 kms on left". This is to give advance notification to the public. These VMS will be deployed using a TGS approved by the traffic control supervisor – such as VMS truck as a shadow vehicle displaying "Road Plant Ahead", "Reduce Speed" and a tow vehicle with the VMS boards. The tow vehicle is to display flashing amber lights.
- Installation of static signage on Gulgan Rd roundabout directing people to festival entrance. Under a shoulder closure.
- Commence internal signage erection.
- Hazard Mesh Fencing to be installed in Fox Lane area to prevent illegal parking and camping. No stopping signs and no camping signs also to be erected in this area at approx. 50m segments. Closure of gravel access track in Fox Lane to help prevent illegal camping.
- The erection of "NO STOPPING" to be placed at 75m maximum spacings along both sides of Tanner Lane and Yarun Road and the erection of "40km/h" speed signs every 100m on both sides of Tanner Lane and Yarun Road. This sign installation is undertaken pre-festival as Tanner Lane and Yarun Road experiences a higher volume of traffic during this time due to the arrival of equipment that is needed for the event and which can be managed.

2.6.3 Monday 3rd April to Tuesday 4th April

- Installation of no stopping signs at 75m maximum spacing along Grays Lane to the intersection of Grays Lane and Prestons Lane. Erected under a speed reduction with a shoulder closure.
- Detail 1, 2, 3, 6 signage as per approved TGS to be erected under shoulder closures.
- Remaining VMS boards for the highway to be installed.
- Light towers deployed ready for light check on Wednesday night.

- Water-filled barriers to be put in place at service station intersection but still allowing normal traffic flow.

2.6.4 Wednesday 5th April

- Traffic control on site for the commencement of the camper arrivals at approximately 8am.

2.6.5 Thursday 6th April

- Opening of the Bluesfest off-ramp and closure of the current Mullumbimby exit at 6:00am. This is performed under a rolling blockade mobile traffic control arrangement to minimize impact on the Pacific Highway and to avoid having traffic control on foot exposed to live traffic.
- Traffic control on site from 8am for the first day of festival.



Figure 3 – Southbound Off-ramp – Bluesfest 2019 (GAA, 18/04/2019)

2.6.6 Thursday 6th April to Monday 10th April

- Traffic Control Day Shift Hours 8:00 am – 5:00 pm
- Day Shift Supervisor – Matt Adams (Altus)
- Traffic Control Night Shift Hours 5:00 pm – 1:30 am or until all cars have left the site.
- Night Shift Supervisor – Matt Adams (Altus)
- Traffic Control Supervisor (whole event) – Matt Adams (Altus)

2.6.7 Tuesday 11th April

- Traffic control crews begin pack-up of Event using the same methodology as the implementation of set-up. The Mullumbimby off-ramp is to be re-opened and the Bluesfest off-ramp is to be closed by 6 am Tuesday morning.

3.0 Traffic Control at Site Gates

3.1 Main Purpose

The main priorities of traffic control at the entries to the site are:

1. Quick entry to the site for event traffic,
2. Safe and efficient site entry and egress;
3. Traffic Controllers monitor for any internal queuing with the potential to cause queueing from the site onto Yarun Road;
4. Traffic Control Supervisor to implement contingency strategy if required to overflow cars into Access 4 (in addition to Access 3), during heavy arrival traffic flows from the south;
5. Traffic Control Supervisor to implement contingency strategy if required to overflow cars from the north into southern entries if required via Tanner Lane, during heavy arrival traffic flows from the north;
6. The Traffic Control Supervisor must be prepared to implement these strategies as required.

3.2 Camper Arrival

Most campers are expected to arrive at the site on Wednesday, Thursday and Friday morning. Campers that arrive on Wednesday, either from the north or south, will be entering through the main southern gate. The new off-ramp access from the north does not open until Thursday morning at 6 am.

From Thursday morning, campers approaching from the north will arrive at the site via the new off-ramp, and will be directed by signage, to the camping accreditation area. These campers will be directed by signage to continue along to enter via the southern main gate. If campers ignore the signage, an enter via the north gate an internal VMS board will direct them over the one lane bridge and to the campers check in station. This internal direction will be supported by traffic control located at key positions within the event site.

Campers from the south will access the site during the festival via the southern main gate similar to general patrons and will be directed by traffic control and VMS boards on how to proceed to the campers check in area.

3.3 Day Patron Arrival

Day patrons will enter the site either from the north gate or the southern gate depending on their point of origin. Normally the majority of day patrons for the Bluesfest begin arriving about 1 hour before the festival gates open.

Traffic controllers and the whole traffic control plan will be set up and in operation from the Wednesday before the first festival gates opening. The traffic plan would remain operative until Wednesday morning, after the festival has finished.

Arrival profiles included in this TMP from the 2022 event traffic data. These profiles indicate peak traffic times that can be expected for Bluesfest events. Generally, the busiest arrival times for patrons is from 2pm–5pm. Traffic controllers should be in place before festival doors open.

3.4 Buses

All buses and taxis are to use the southern main entry and exit. There will be no kiss & ride facility in the northern area of the event site. Buses from the north will use the Motorway and exit via Grays Lane or the Southbound off-ramp during peak departure times, to reduce the queuing at the Gulgan Road overpass. Buses are made aware of this process prior to the festival and comply accordingly.

Signage for the remaining traffic when departing the Bluesfest event site, will be promoting a right-hand turn onto the highway via Tyagarah Interchange to avoid the use of Grays Lane. VMS boards situated on the highway prior to Grays Lane intersection will advise southbound travellers of merging traffic ahead, encouraging movement into the right-hand fast lane to avoid potential congestion. Furthermore, during departure peak times, an Advanced Warning Vehicle will be positioned southbound on the highway, notifying of merging traffic ahead.

3.5 Departure

The departure of vehicles is to be divided as per the parking area. Those in the north parking areas will leave the site and join the highway via the service station intersection and the Tyagarah Interchange bridge and travel north on the Pacific Highway. The departure for the northern car park patrons to exit to the north will be supported by variable message signs, static signage and traffic control. Any motorists that need to travel south from this point will be directed to turn around at the Gulgan Road north interchange.

Vehicles parking in the southern parking area will leave the site and turn left and travel south on the Pacific Highway. The departure for the southern car park patrons to exit to the north will be supported by variable message signs, static signage and traffic control. Any motorists that need to travel north from this point will be directed to turn around at the Ewingsdale Road interchange.

Exiting buses are to exit using the southern gate and then proceed to the service station, prior to entering the Pacific Highway. Traffic control will be required to manage the exit from the site and the service station intersection to ensure no significant obstruction of northbound or southbound traffic. The peak bump-out period will be managed by physically separating the traffic from the south and north carparks at the service station intersection with water-filled barriers located in the middle of the road. This will allow traffic exiting the site to the north and south without any conflict. Traffic control will manage the conflict with traffic coming from the Tyagarah overbridge to enter the site precinct and traffic exiting the north carpark.

4.0 Traffic Control On-site

4.1 Main Purpose

Traffic control outside the event site can only operate effectively for incoming traffic, if the internal traffic and parking is managed properly. Any congestion on-site in the parking area or internal road network may result in queuing on Tanner Lane and Yarun Road and then onto the Pacific Highway.

The traffic control plans therefore require TFNSW certified traffic controllers at various key locations on site.

4.2 Car Parks

The traffic controllers depicted on the TGS at the entries and internal roads are there to assist festival guests. Internal/ Entry signage and VMS boards are also used to provide direction.

It is essential that the traffic controller does not engage in a discussion with the driver of the vehicle but gets the driver off the road, after which the driver is dealt with by festival parking staff. Any congestion at this point would quickly result in queuing onto the public road system, which is not acceptable.

4.3 North-South Internal Road

There are traffic controllers on this road, to provide the opportunity for a relief route, if issues arise at other locations.

Potentially, and based on previous festivals at this site, this road service to relieve the overflow of traffic, if one car park becomes full.

It is likely that south bound campers will be required to use this road along with bus and taxi, to get to the existing and taxi bays. Also, for campers to get to the camp check out area. This will be required if no northern facilities for campers check in or bus and taxi set down and pick up are provided.

This traffic control of the north-south road does also affect the back-of-house operation and has to be managed well to keep the function of the festival and ensure that these traffic conflicts are managed such that no queuing appears onto the public road network.

4.4 Bus and Taxi Ranks

Traffic controllers at the bus and taxi ranks are not required other than to get buses and taxi in and out of the traffic line to ensure that these ranks are operated safely and congestion is prevented both in the ranks as well as on the internal road system.

4.5 Role of On-site Supervising Traffic Engineer

The Supervising Traffic Engineer shall consult the traffic, parking and camping controllers, as required, to ensure an efficient entry and exit from the site. This role will also incorporate decisions with respect to the use of overflow parking areas.

5.0 Traffic Monitoring

The Supervising Traffic Engineer will undertake site monitoring in consultation and co-ordination with traffic control resources during the event to:

- Ensure traffic management arrangements are installed in accordance with the approved TGS;
- Ensure traffic control implementation and operation is in compliance with TfNSW Traffic Control at Worksites Technical Manual (TCWS) Version 6.1 and AS1742.3;
- Observe driver behaviour on the external road network and internal car park access to assess the suitability of the traffic management arrangements associated with the event and recommend changes as necessary; and
- Monitor compliance with DA conditions including end of queue management and traffic flow rates on local roads.

Traffic control observers will be utilised at key locations to monitor queue lengths against known markers and undertake spot traffic counts to measure traffic flows during peak traffic flow periods.

A traffic evaluation report will be prepared following the event to assess the traffic management performance against the relevant standards and guidelines and key performance indicators.

6.0 Paid Parking

Bluesfest has previously introduced paid parking for the event to offset the significant annual investment into parking infrastructure capital & recurrent, mounting costs of Traffic Management, increased User Pays Police contingent for Counter Terrorism including Hostile Vehicle Mitigation Measures. Paid parking will also assist with reducing traffic impacts by increasing carpooling, bus usage and drop-off.

The Paid Parking will not affect the previous points 1.0 through 5.0 of this TMP. Patrons will pre-purchase their parking tickets online and staff will be employed to scan and check patrons parking tickets for the correct days. Their tickets will be scanned by hand held devices. The parking team will only approach cars for their pre-paid ticket once they have been directed to a parking bay.

For the small number of patrons that have not pre-purchased a ticket before they arrive, they will have the chance to purchase one on the spot from one of the paid parking staff. The method of collection will be a Credit Card Tap Device that will be indicated to the Patrons before they arrive. Bluesfest management will have campaigns around this message. Extra signage at entrance points to the festival site will also reinforce what to expect on parking their vehicles. Staff and contractors will be supplied with a sticker and or identification pass that will allow them to park straight away and not incur the paid parking fee.

Ample information will be made available before and whilst tickets go on sale, as well as during the festival. Bluesfest management will notify patrons of this initiative via online EDMs, Facebook page, Instagram page, SMS campaigns and side of stage screens. Bluesfest management will provide patrons with detailed information on how to pre-purchase and what occurs if they do not.

The Payment collection team will be under the direction of the experienced North and South Car Park Supervisors who will be monitoring queue lines and flow rates of traffic within the car parks. Through the Bluesfest website and social media platforms Bluesfest management will be engaging patrons to notify them of the payment structure and to be ready with payment on arrival. At any point during a peak flow period if the Paid Parking initiative impacts on the traffic flow it will be suspended until it is deemed practical to continue.

The safety of Bluesfest staff, patrons and traffic flow on the Pacific Highway is of the highest importance and will be considered first at all times. By introducing paid parking not only does Bluesfest get the opportunity to offset the significant annual investment into parking infrastructure capital & recurrent it also gives staff a chance to engage vehicle occupants before they enter the festival area to assess any suspicious behaviour and alert Security & Police. Bluesfest believes this initiative is beneficial for the smoother running, financial bottom line and safety of Bluesfest.

6.1 Contingency Plan

If the level of queuing due to the introduction of paid parking does not meet KPI requirements, Bluesfest car park marshals will cease scanning of prepaid car parking tickets and will park cars as they arrive.

7.0 Contact Details

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Parking Control Supervisor: Rex Butler
Mobile: 0412 814 823

Pick Up/Drop Off &
Bus Stop Supervisor:
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Mobile: Dalae La Boeuf (Pick Up) – 0403 524 657

Camping Control Supervisor: Tanya Bensley
Mobile: 0409 423 259

8.0 2022 Traffic Data Overview

8.1 2022 Traffic Arrival/Departure Profiles

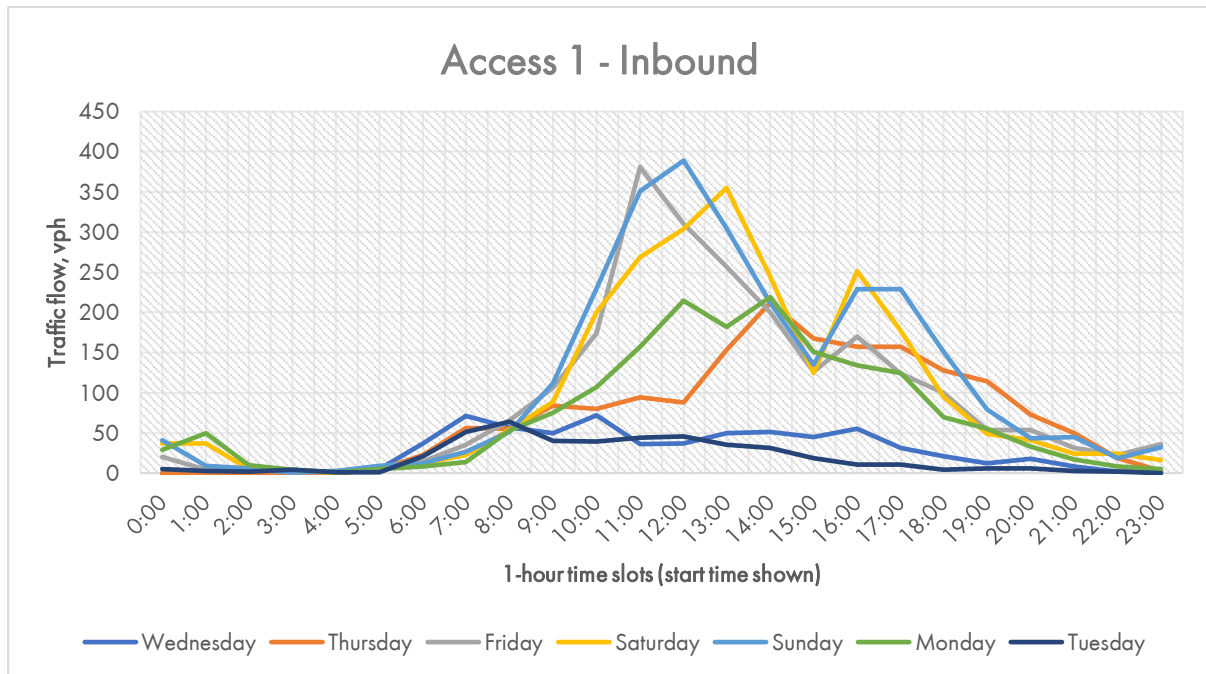


Figure 4 - Access 1 inbound traffic (GAA, 2022)

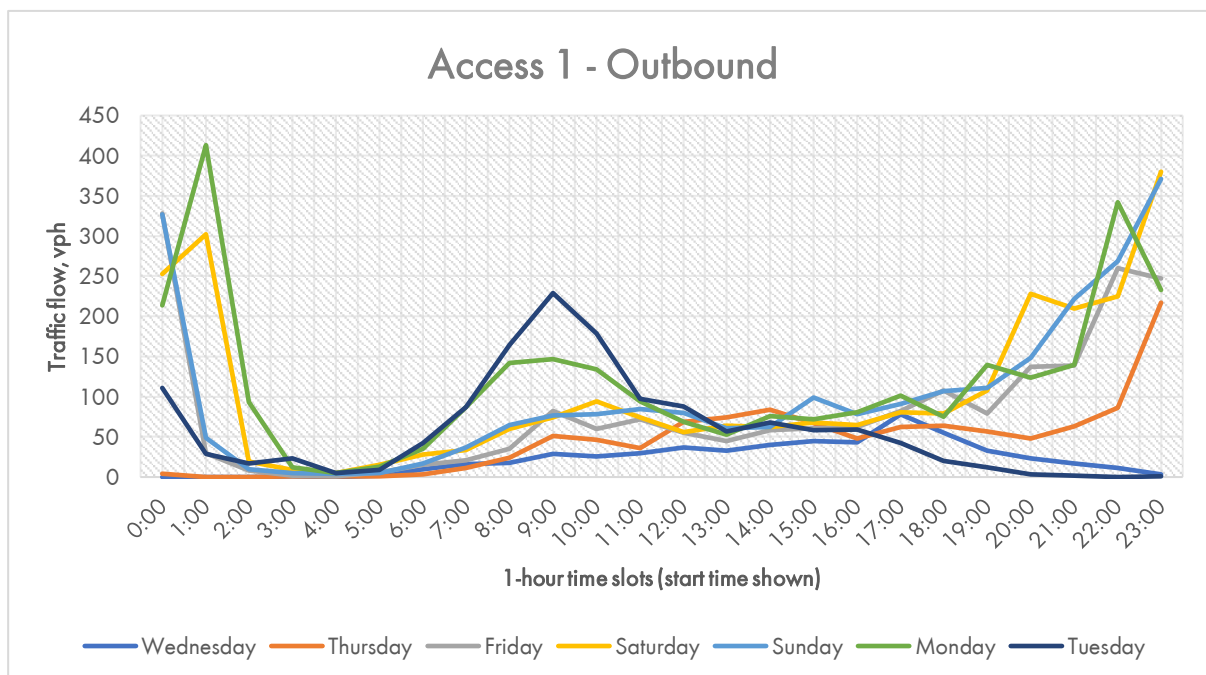


Figure 5 - Access 1 outbound traffic (GAA, 2022)

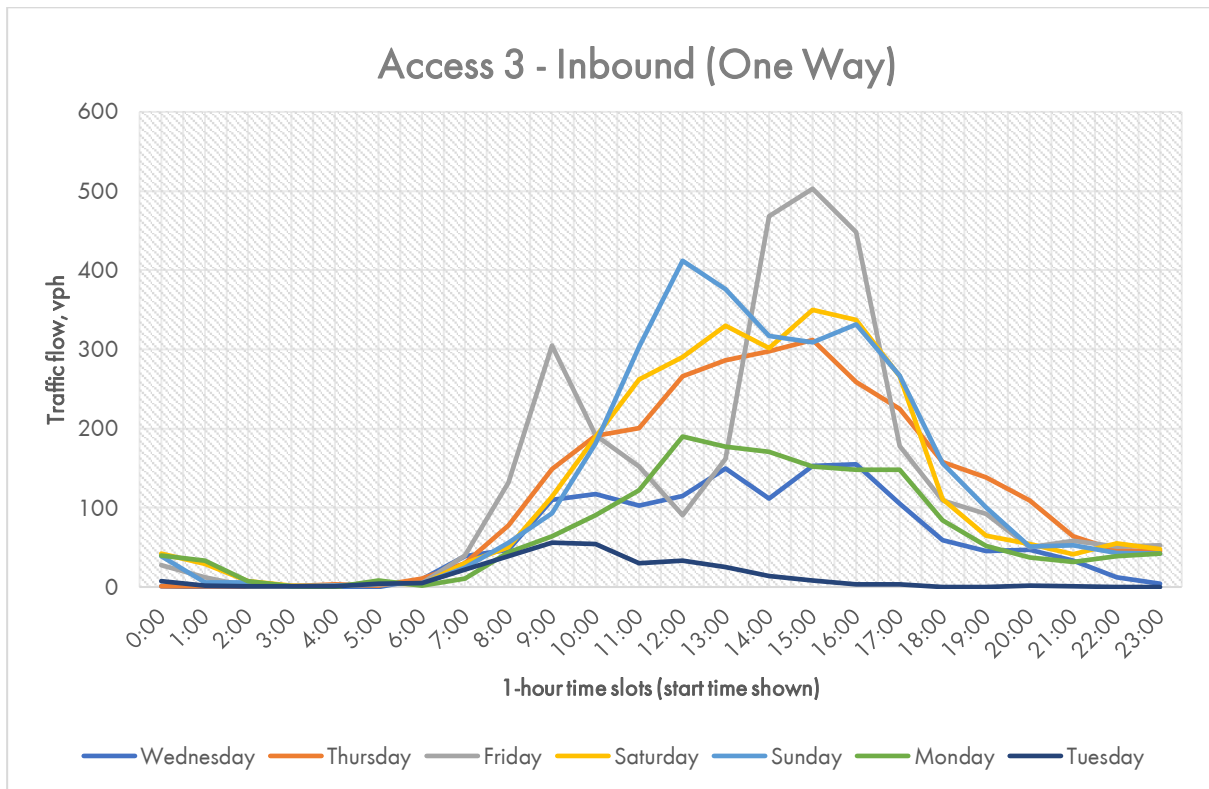


Figure 6 - Access 3 inbound traffic (GAA, 2022)

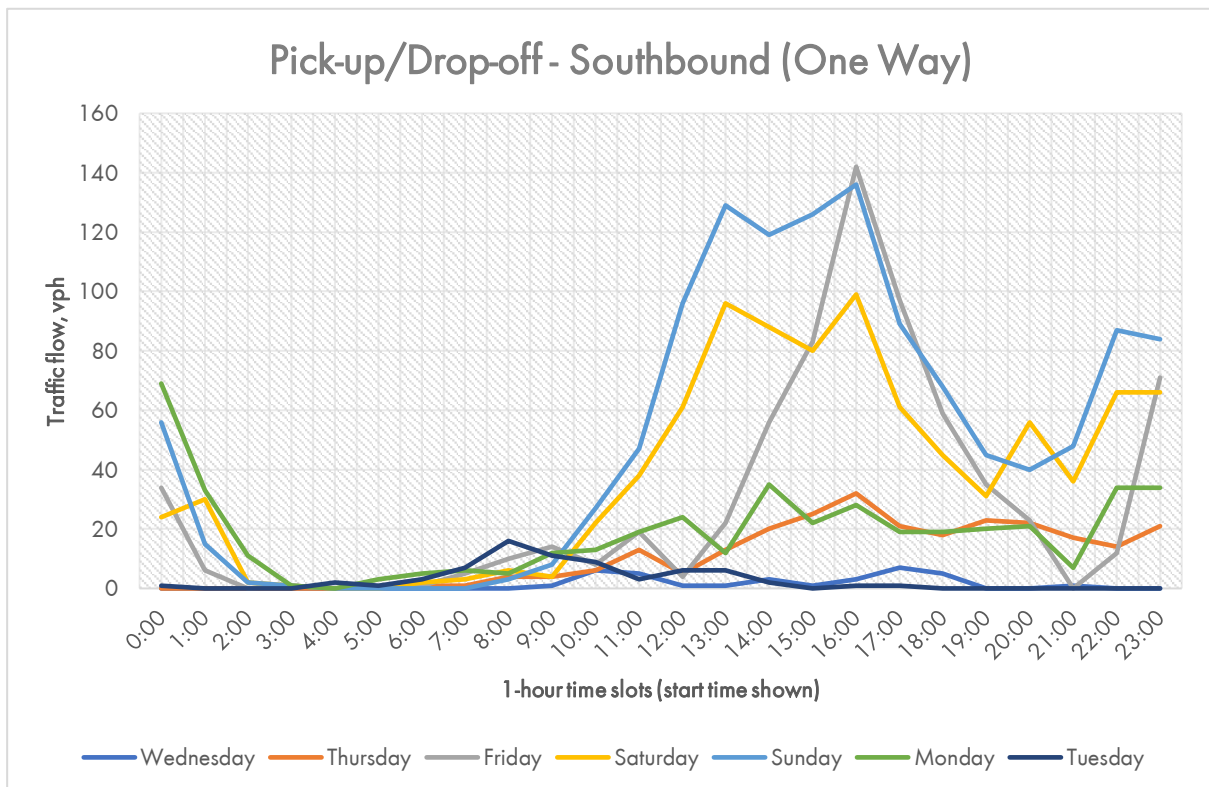


Figure 7 - Pick-up/Drop-off area southbound traffic (one way) (GAA, 2022)

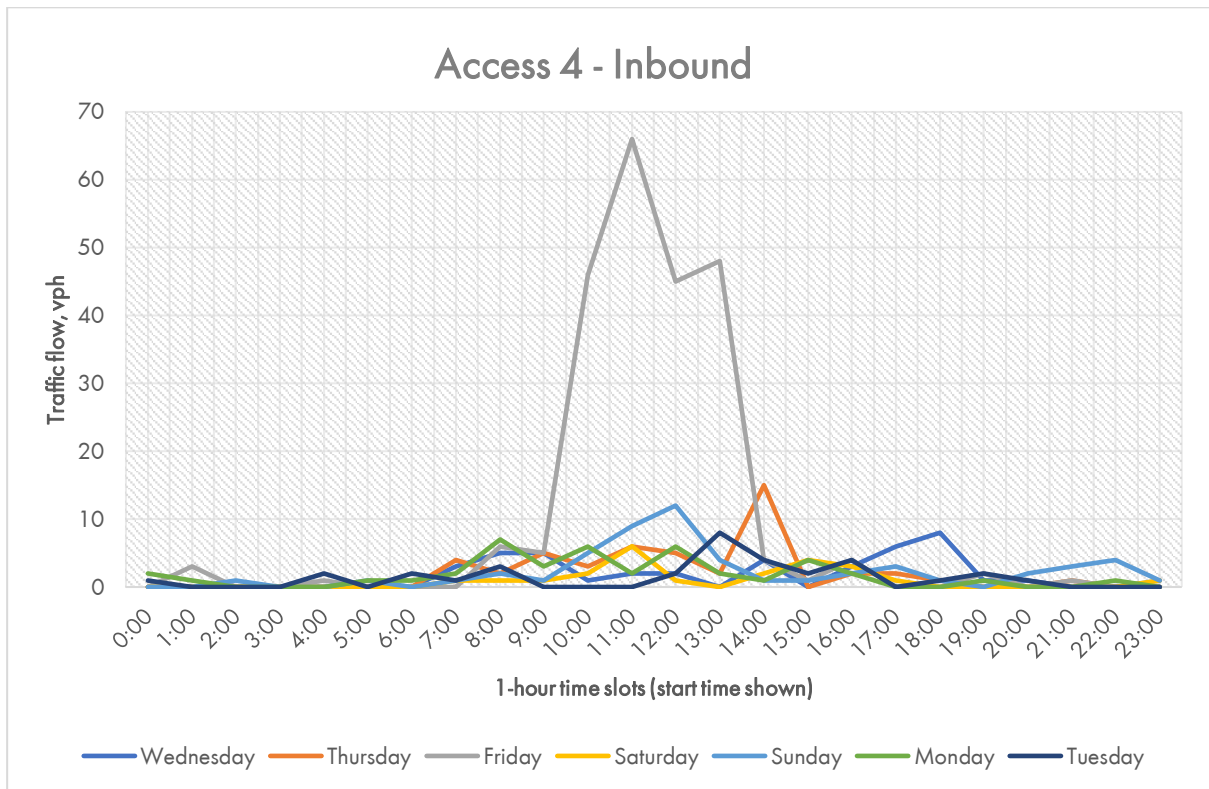


Figure 8 - Access 4 inbound traffic (GAA, 2022)

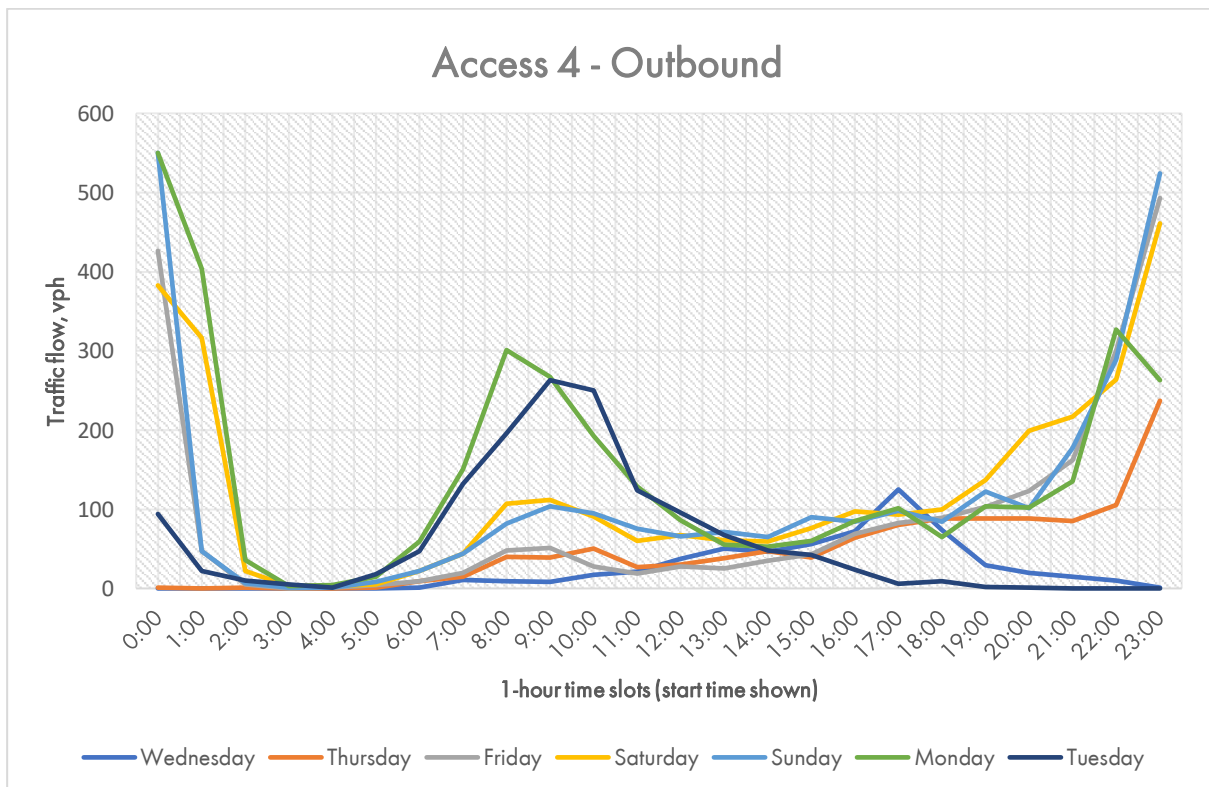


Figure 9 - Access 4 outbound traffic (GAA, 2022)

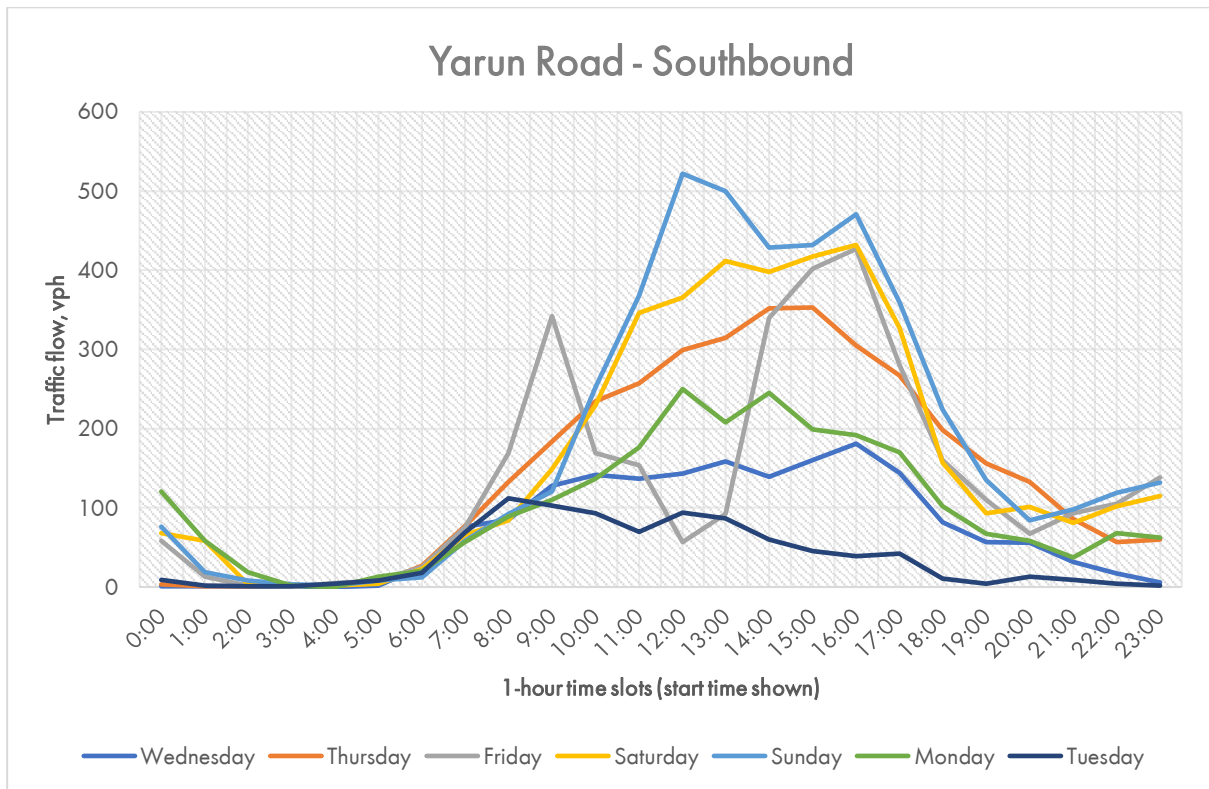


Figure 10 - Yarun Road southbound traffic (GAA, 2022)

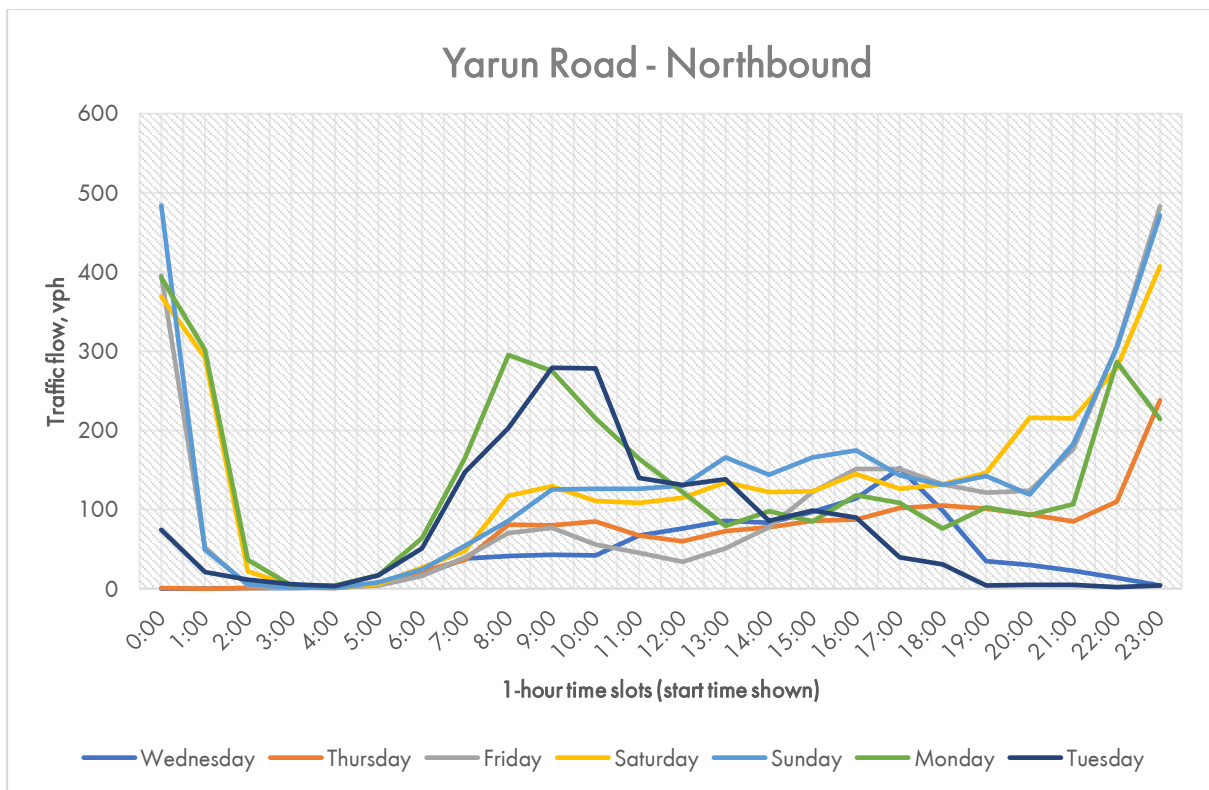


Figure 11 - Yarun Road northbound traffic (GAA, 2022)

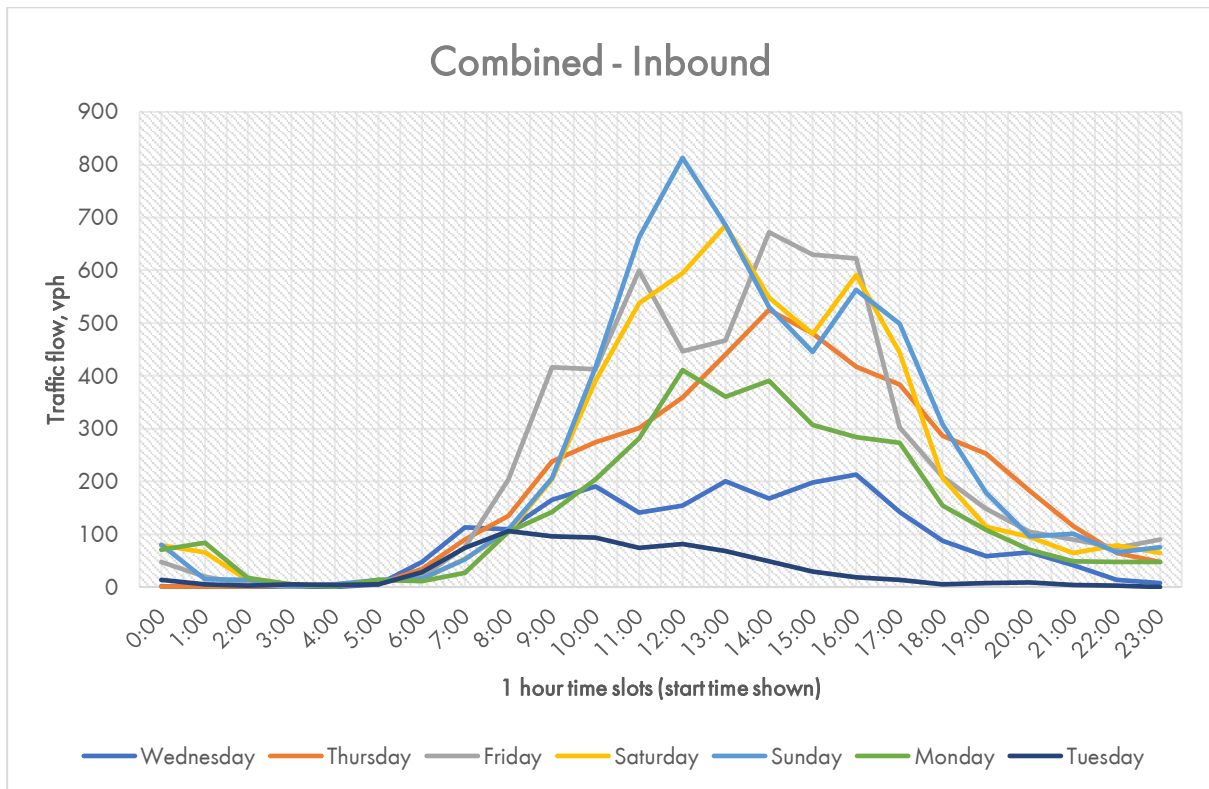


Figure 12 - Combined inbound traffic (GAA, 2022)

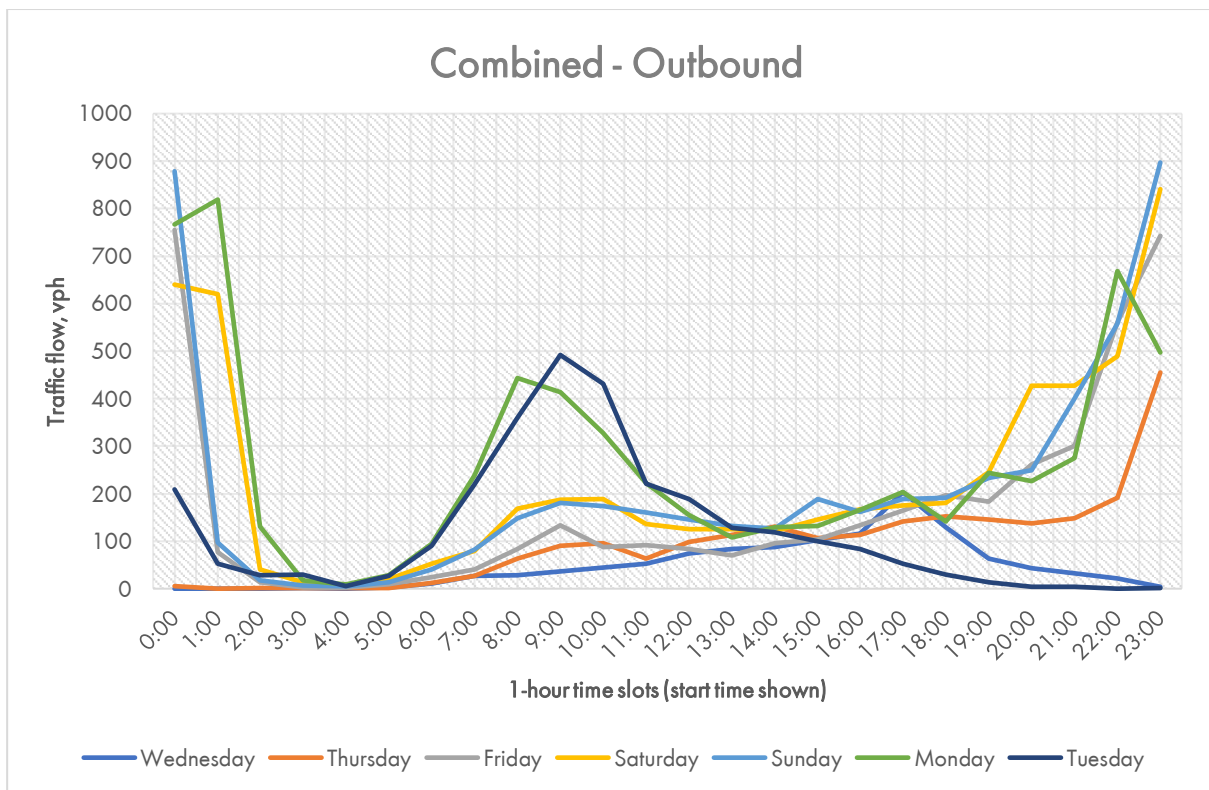


Figure 13 - Combined outbound traffic (GAA, 2022)

8.3 2022 Estimated Number of Vehicles On-site

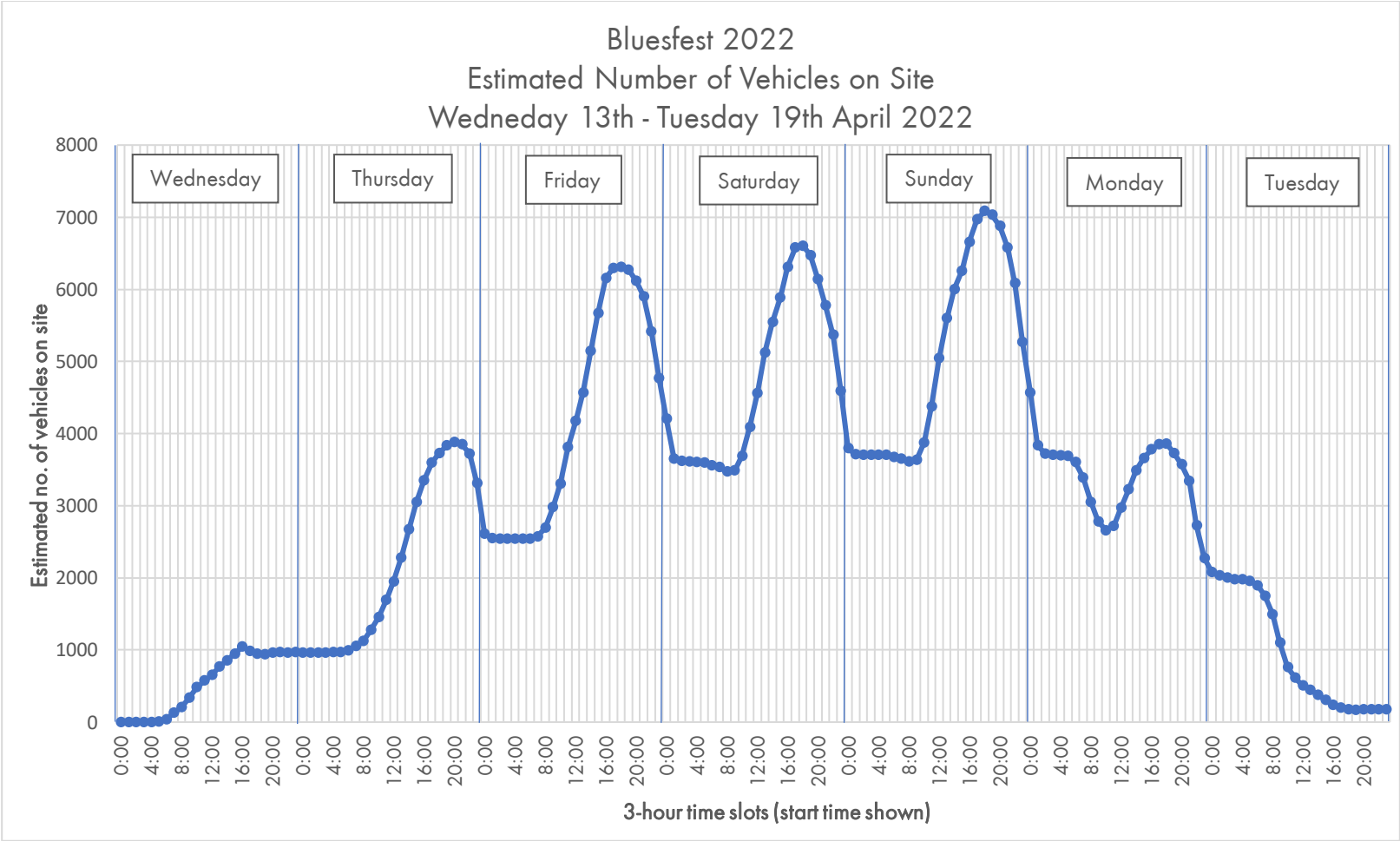


Figure 14 – Estimated number of vehicles on site at Bluesfest 202

9.0 Risk Assessment

A risk assessment for the traffic operation of the 2023 Bluesfest event is described in this section. The risk assessment is set up such to identify potential risks to public health as a result of the festival traffic operations. The key performance indicators (KPIs) as defined by the development approval are aimed to reduce the likelihood of occurrence by requiring management of traffic queue growth and Level of Service (LoS).

Additional risk reducing measures such creating temporary low-speed environments at high-risk locations are part of the traffic management tools recommended in this TMP.

There are risks from hazards that might occur that are outside the control of the festival management or traffic controllers. These hazards would include extreme weather conditions and crashes on the public road. In order to reduce the risk of these hazards, risk mitigating strategies are recommended in this risk assessment.

It is noted that it is the combined responsibility of festival management and government authorities to ensure that there is sufficient funding available and personnel in place for adequate implementation of the traffic control plans, infrastructure and risk mitigation measures.

The risk assessment proposed in this report is provided as a guide. Bluesfest recommend that after all relevant staff, consultants and contractors have been engaged, that a risk management meeting is held prior to the event. During this risk management meeting, a final risk assessment shall be established which would be included in the festival management manual. This risk management meeting shall include:

- Bluesfest Event Manager;
- Event Traffic Manager;
- Traffic Engineer;
- Traffic Control Supervisor;
- Police representative;
- Ambulance representative;
- Rural Fire Service (RFS) representative;
- TfNSW representative;
- Council representatives (BSC and TSC).

The risk assessment along with classification of risks and definitions are provided in Appendix C of this TMP.

10.0 Copies of the Traffic Management Plan

Copies of the Traffic Management Plan, after signature by the relevant persons nominated in the plan, shall be forwarded to the following authorities as a reference should there be any need for contact, such as in the case of an emergency.

- NSW Police Force;
- TfNSW;
- NSW Ambulance Service;
- Rural Fire Service;
- Byron Shire Council;

11.0 Audit Checklist

Any traffic controllers shall complete the TGS Audit Checklist as included in this report, before the start of the festival and immediately prior to the closure of the festival. The aim of this audit is to ensure that all the requirements of the TGS have been in place for the full duration of the event.

Table 1 – TGS audit checklist

AUDIT CHECKLIST				
Date:		Time:		Auditor:
Office/Company:			Site Supervisor:	
Location:				
Nature of Activity:				
Duration of Activity:				
Road Configuration:				
		YES	NO	N/A
1	Provision for Activity			
1.1	Has an approved TGS been provided?			
2	Implementation			
2.1	Are all signs & devices installed in accordance with TGS?			
2.2	Are there any contradictory, distracting or superfluous signs or markings?			
2.3	Are signs suitably placed with regard to:			
2.3.1	Sight distance			
2.3.2	Motorists approaching at high speed			
2.3.3	Queue lengths			
2.3.4	Visibility, shade, light glare?			
2.4	Are all signs displayed appropriate for the current conditions?			

2.5	Are there any damaged or defective signs?			
2.6	Have the needs of pedestrians been considered?			
2.7	Have the needs of cyclists been considered?			
2.8	Are safety barriers required?			
2.9	Are safety barriers installed correctly?			
2.10	Has access to the site been provided?			
3	Documentation Sighted			
3.1	TGS, including details & modifications			
3.2	Direction to Restrict (DTR)			
3.3	Traffic controllers' certification			
4	Has the Signage been covered for non-TfNSW Controllers operation as specified on the TC Plan?			
Comments/Findings:				

Recommendations/Corrective Action:	
Auditor (signed):	Site Supervisor:

12.0 Chain of Command

The traffic engineer will generally be present at the site or the surrounding road network at the times of peak event traffic activity undertaking traffic monitoring and observations.

The responsibilities of the traffic engineer are:

- Certification of the installation and proper implementation of TMP and TGS
- Liaison with Bluesfest management and site manager as required
- Liaison with traffic control supervisor as required
- Undertake traffic monitoring activities
- Provide Traffic Evaluation Report (TER) following each event
- Design and modification of existing approved TGS prior to each event
- Certification of new TGS prior to each event

The traffic control supervisor will be present at the site or surrounding road network during peak arrival and departure periods, and be available at all times to implement contingency measures.

The responsibilities of the traffic control supervisor include:

- Liaison with Bluesfest management and site manager
- Liaison with traffic control staff
- Liaison with camping manager
- Liaison with parking manager
- Liaison with traffic engineer
- Liaison with Council and TfNSW
- Liaison with NSW Police

Changes to the TGS can only be made by a TfNSW accredited person with a Prepare a Work Zone Traffic Management Plan card. This would normally be either the traffic engineer or the traffic control supervisor. The traffic control supervisor will supervise the operation of the TMP and TGS and ensure that the Traffic controllers are advised of their roles in the traffic management. The traffic engineer will report any significant issues observed to the traffic control supervisor as required.

The festival management would be expected to contact the traffic engineer or traffic control supervisor to discuss any traffic matters as per the hierarchy flow chart in Appendix C. The success of the implementation of this TMP depends on a coordinated managed traffic approach which will be achieved by following a chain of command protocol. This is also to be reinforced in the protocol issued to the contracted traffic control company.

13.0 Conclusion

This TMP has been prepared by GAA for Bluesfest 2023 festival at Tyagarah, NSW.

It is anticipated that the 2023 Bluesfest event will be managed such that festival traffic does not adversely impact the Pacific Motorway or the local road network outside the levels nominated in the development consent. This will be achieved by implementing the traffic management procedures as outlined in this TMP.

A risk assessment has been undertaken to identify potential risks to public health as a result of the festival traffic operations. Compliance with the KPIs outlined in this TMP will reduce the likelihood of occurrence by requiring management of traffic queue growth and Level of Service (LoS).

An appropriately qualified traffic engineer should be present during peak times to enable effective evaluation of the implementation of the TMP and TGS and make adjustments where required.

Traffic counters will be installed to monitor traffic flows both for rate and volume. Monitoring of the operation of the carparks, in particular the operation of the car parks for ingress and egress, is to be performed by festival staff to ensure effective operation of the car parks.

Appendix A — Bluesfest 2023 Site Map

Appendix B — Traffic Guidance Scheme (TGS)

Appendix C — Risk Assessment Register

RISK ASSESSMENT												
Activity	Hazard Description	Direct Consequence	Potential Indirect Consequence	Initial Risk Rating			Method for risk mitigation	Responsible person for mitigation implementation	Person responsible for ensuring sufficient funding to enact mitigation	Residual Risk Rating		
				L	C	Risk Class				L	C	Risk Class
Traffic control on public road	Traffic controller hit by car	Injury or death	Traffic congestion and queue growth	3	A	2	Ensure installation in accordance with TMP traffic control plan	Traffic control manager	Festival general manager	5	A	3
							Ensure TC staff compliance with WHS regulations and other relevant legislation	Supervisors and overseers	Festival general manager			
On-site vehicle processing	Insufficient rate at which vehicles are processed	Traffic congestion and queue growth	Collision on public road	2	A	1	Ensure eufficient staff for vehicle processing	Parking manager	Festival general manager	5	A	3
							Ensure adequate equipment to enable staff to process vehicles safely and efficiently	Parking manager	Festival general manager			
							Implementation of contingency measures (including "snake" in southern carpark) to create additional vehicle storage on-site	Event traffic manager	Festival general manager			
							Traffic controllers on public road to control back of queue	Traffic control manager	Festival general manager			
Patron arrival, departure and additional festival traffic generation throughout event	Higher patron arrival flow than anticipated	Traffic congestion	Collision on public road	2	A	1	Traffic management plan to allow for sufficient contingency	Traffic control manager	Festival general manager	5	A	3
							Contingency plans available for enactment if needed	Traffic control manager	Festival general manager			
							Queue warning vehicle implementation	Traffic control manager	Festival general manager			
	More concentrated arrival peak than anticipated	Traffic congestion	Collision on public road	2	A	1	Traffic management plan to allow for sufficient contingency	Traffic control manager	Festival general manager	5	A	3
							Contingency plans available for enactment if needed	Traffic control manager	Festival general manager			
							Queue warning vehicle implementation	Traffic control manager	Festival general manager			
	Crash on critical intersection or traffic lane	Injury or death	Traffic congestion and queue growth	3	A	2	Secure crash site	NSW Police Force	NSW Police Force	5	A	3
							Provide first aid to persons involved	NSW Ambulance Service	NSW Ambulance Service			
							Manage traffic at crash site	NSW Police Force	NSW Police Force			
							Manage back of queue	Traffic control manager	Festival general manager			
	On-site crash	Injury or death	Traffic congestion and queue growth	2	A	1	Ensure adequate on-site road network	NBP general manager	NBP shareholders	3	C	3
							Ensure sufficient visibility through corners	NBP general manager & event traffic manager	NBP shareholders & festival general manager			
							Ensure low-speed environment	Event traffic manager	Festival general manager			
							Prevent occurrence of sudden stopping	Event traffic manager	Festival general manager			
							Secure crash site	NSW Police Force	NSW Police Force			
							Provide first aid to persons involved	NSW Ambulance Service	NSW Ambulance Service			
							Manage traffic at crash site	NSW Police Force	NSW Police Force			
							Manage back of queue	Traffic control manager	Traffic control manager			
	On-site vehicle breakdown	Traffic congestion and queue growth	Collision on public road	2	A	1	Remove vehicle from traffic lane	Event traffic manager	Festival general manager	3	C	3
							Implementation of contingency measures (including "snake" in southern carpark) to create additional vehicle storage on-site	Event traffic manager	Festival general manager			
							Low-speed zones in high-risk areas as shown in TMP and TGS	Traffic control manager	Festival general manager			
							Traffic controllers on public road to control back of queue	Traffic control manager	Festival general manager			
	Queueing on motorway, motorway off-ramp or arterial road	Traffic congestion and queue growth	Potential back of queue crash	3	A	2	Contingency plans available for enactment if needed	Traffic control manager	Festival general manager	4	A	3
							Queue warning vehicle implementation	Traffic control manager	Festival general manager			
	On-site fire or bush fire	Panic by drivers	Potential collisions on site and public road	2	A	1	Fire prevention by site planning, vegetation maintenance, and crowd control	NBP general manager & event traffic manager	NBP shareholders & festival general manager	3	D	3
							Fire identification and firefighting	RFS & event manager	RFS & festival general manager			
	Severe wind, rain and/or hail	Sudden stop of traffic flow and uncontrolled stopping of vehicles on traffic lane and shoujlder	Collision	2	A	1	Monitor weather and issue severe weather warnings to staff, contractors and pastrons if required	Event traffic manager	Festival general manager	3	D	3
							Queue warning vehicle implementation	Traffic control manager	Festival general manager			
							VMS text to be changed to warn drivers of severe weather and traffic congestion	Traffic control manager	Festival general manager			

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RISK ASSESSMENT MATRIX						
		CONSEQUENCE				
		MINOR	MAJOR	SEVERE	CRITICAL	CATASTROPHIC
LIKELIHOOD	Rank	E	D	C	B	A
VERY UNLIKELY	5	Low	Low	Low	Medium	Medium
UNLIKELY	4	Low	Low	Medium	Medium	High
POSSIBLE	3	Low	Medium	Medium	High	High
LIKELY	2	Medium	Medium	High	High	Extreme
ALMOST CERTAIN	1	Medium	High	High	Extreme	Extreme

RESIDUAL RISK IMPLICATION	
Residual Risk	Action
Low	Implement control measures where required and proceed with work task.
Medium	Consider and implement all practical controls to reduce risk prior to proceeding with work task. Actively manage risk as task proceeds.
High	Implement all practical control measures to reduce risk prior to proceeding with work task. Actively manage risk as task proceeds.
Extreme	Do not commence work task; notify festival general manager immediately.

LIKELIHOOD DEFINITION		
LIKELIHOOD	Rank	Definition
VERY UNLIKELY	1	Occurs < 1 in 100 projects
UNLIKELY	2	Occurs in 1 in 100 projects
POSSIBLE	3	Occurs in 1 in 10 projects
LIKELY	4	Possible in every project
ALMOST CERTAIN	5	Possible more than once in every project

CONSEQUENCE DEFINITION		
CONSEQUENCE	Rank	Definition
MINOR	A	Basic first aid administered
MAJOR	B	Injury requiring medical treatment
SEVERE	C	Lost time injury
CRITICAL	D	Irreversible health effects, impairment or illness



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- House Plan Drafting
- BASIX Certificates



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- Contaminated Land (SEPP 55)
- Acoustics & Noise
- Wastewater Management
- Acid Sulfate Soil
- Water Quality
- Ecology