Greg Alderson & Associates

Chartered Professional Engineers and Scientists

Traffic Management Plan
Falls Festival 2017/18 at North Byron Parklands, Yelgun, NSW

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Table of Contents

Table of Figures

Table of Tables

1.0 Introduction

Greg Alderson and Associates (GAA) have been engaged by *Look up and Live Pty Ltd* to update the Traffic Management Plan from previous events for the Falls Festival Byron at North Byron Parklands in Yelgun that is to be held during the New Year's period of 2017/18. The festival will be held from 31 December 2017 to 2 January 2018. Camper bump in will commence on Saturday 30 December 2017. The camping areas close in the afternoon of 3 January 2018.

1.1 Project brief

The aim of the Traffic Management Plan (TMP) is to prescribe traffic management and control procedures for the Falls Festival at Yelgun, in order to satisfy the conditions of consent as set out in Project Approval by the Minister for Planning and Infrastructure, dated 24 April 2012. In conjunction with this Traffic Management Plan a Traffic Monitoring Protocol will be developed by our office. These documents will set out data collection methods in order to provide sufficient data to assess future and potentially larger events at the event site.

1.2 Relevant standards, specifications and guidelines

This TMP will be prepared in accordance with the following standards, specifications and guidelines:

- Guide to Traffic and Transport Management for Special Events Version 3.4
- RMS Traffic Control at Worksites manual
- Australian Standards (in particular AS1742)
- Quality Assurance specifications
- Austroads Guide to Traffic Management.

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.
Peak Flow Rate	Hourly volume of vehicles during busiest part of assessment period
Background Traffic	Traffic composition as would typically exist without superposition of event traffic
Heavy Vehicle	For the purposes of this report; anything other than a pedestrian, cyclist, motorbike or car

1.3 Site location

The subject site is formally known as Lots 46, 402-404, 410 DP 755687; Lots 10, 12, 14 DP 875112; Lots 2, 12 DP 848618; Lot 101 DP 856767; Lots 30-31 DP 880376; Lots 101-102, 107 DP 1001878; Lot 1 DP 1145020, Tweed Valley Way and Jones Road, Yelgun. The southernmost entry to the site is located at approximately 1km to the North from the Yelgun Interchange and Yelgun Rest Area. **Figure 1** below depicts the location of the site with respect to its locality.

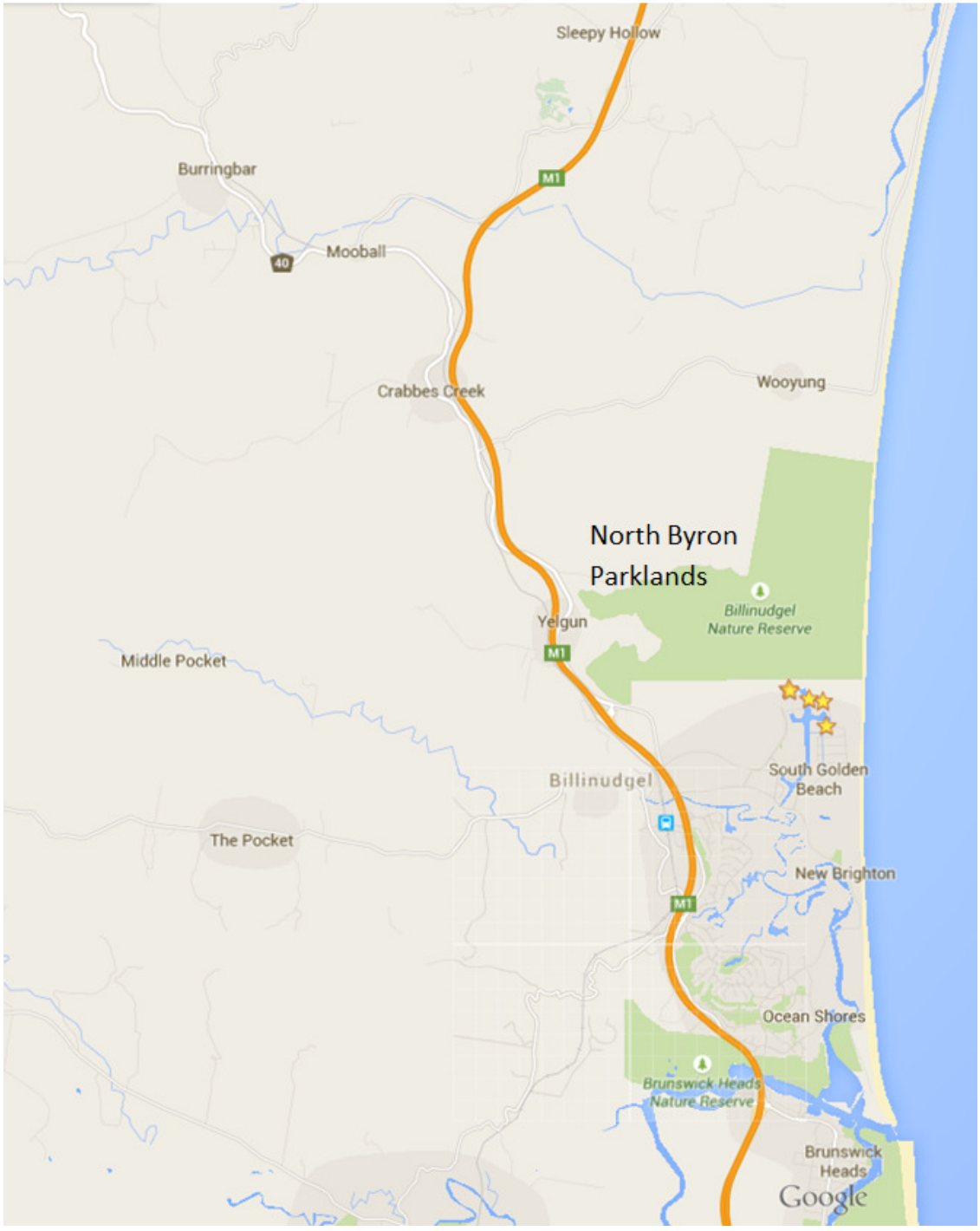

Figure 1 - Site locality, *Source of map: Google Maps 2015*

1.4 Event description

The Falls Festival Byron is a music and arts festival that will be held at North Byron Parklands from 31 December 2017 until 2 January 2018.

Falls Festival operates in such a way that it is held at two other locations in the same period, so that artists can be transported between event locations. In that format it has been held successfully at Marion Bay in Tasmania for 14 years and Lorne in Victoria for 25 years.

The Falls Festival was held at North Byron Parklands for the first time during the 2013/14 New Year's Eve period and held each year since that date. All festivals were a success from a traffic engineering perspective with no major impacts on the public roads during peak arrival periods.

Although the event days are 31 December 2017 until 2 January 2018, the campgrounds will open on 30 December 2017 and close on 3 January 2018.

Three types of tickets, plus a camping ticket will be sold for this event and are summarised in Table 1.

As compared to previous years, separate tickets will be required to be purchased to camp on the site. This TMP has been based on the assumption the number of campers and flow rates remains similar to previous years. Festival Management will monitor sales of camping tickets to confirm this assumption remains true. If not, contingency plans should be put in place.

Table 1 - Overview of ticket types

Ticket name	Arrival dates	Festival entry dates	Departure date	Anticipated number of tickets
3 Day Festival Ticket	30 and 31 Dec	31 Dec – 2 Jan	3 Jan	22,500
2 Day Festival Ticket	31 Dec or 1 Jan	31 Dec – 1 Jan or 1 Jan – 2 Jan	2 or 3 Jan	2,250
1 Day Ticket	31 Dec or 1 Jan or 2 Jan	31 Dec or 1 Jan or 2 Jan	1, 2 or 3 Jan	250
Camping Ticket	Applies as additional ticket to all above			

ð[1]The Falls Festival will function as the fifth approved 'Medium Trial Event' with an anticipated maximum patronage of 25,000 people with an additional 3,000 staff, stallholders, contractors and guests. The fifth column in Table 1 depicts the anticipated number of ticket holders of each ticket type based on information provided to our office by festival management. Validity of this TMP and associated traffic control plans is subject to compliance with these attendance numbers.

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1.5 Event Calendar

The festival schedule can be summarized as follows:

Saturday 30/12/17	Camp grounds open
Sunday 31/12/17	Event day 1
Monday 1/1/18	Event day 2
Tuesday 2/1/18	Event day 3
Wednesday 3/1/18	Campground close, camper departure

Car pass sales are used to control arrival days of patrons. For previous years, typically 60% of car passes are sold for 30 December and the remaining 40% for 31 December. For the 2017/18 event Festival Management will monitor sales of camping tickets to confirm the distribution of camping tickets remains similarly or better distributed across the days for camper arrivals.

Some campers may depart on Tuesday night but the majority of campers would leave the site on the Wednesday, which is the day that the camping area will close.

1.7 List of conditions

The following is an overview of the consent conditions that have been provided to this office detailing the various conditions that are relevant to the festival traffic operation and are thus relevant to this TMP. This TMP is therefore formally responding to those conditions of consent.

A Condition Compliance Summary Table is provided later in this document, summarising what conditions are complied with and in which section of this report they are addressed.

1.7.1 B4 – Traffic management and parking

1. A minimum Level of Service D is to be maintained at the Yelgun interchange and along Tweed Valley Way.
2. Queue lengths on the link road between Tweed Valley Way and Yelgun interchange are to be limited to a maximum of 70m.
3. Queue lengths on the northbound off-ramp must not extend more than 210m from the Give Way yield line.
4. No car parking is to occur on the land to the South of Yelgun Creek. Should this area be required for car parking in the future to accommodate larger events, the proponent must demonstrate that patrons can access vehicles south of the creek line in a risk free manner for events up to and including 100 year ARI flood event for the Director General's approval.
5. The southern car park (south of Jones Road and north of Yelgun Creek) may only be used if the event is to cater for more than 20,000 patrons.

1.7.2 C9 – Transport Management Plan

Although the Condition nominates a "Transport" Management Plan we have retained the name "Traffic" Management Plan.

A Transport Management Plan (TMP) having regard to the *"Guide to Traffic and Transport Management for Special Events"* and the *Environmental Health and Safety Management Manual* is to be prepared for each event at least 60 days prior to the event. The TMP must be submitted to the Local Traffic Committee for endorsement and then to the Director-General and RWG prior to the commencement of each event.

The TMP must include, but not be limited to:

a) A copy of the approved Traffic Control Plan;
b) Management of traffic during 'bump in' and 'bump out' and event days;
c) Details of how local traffic movements past the site will be given priority and in particular, ensuring that residents of Jones Road can access their properties;
d) Details of how substantial queuing capacity will be provided on-site, thus avoiding queuing on Tweed Valley Way and the Yelgun interchange off-ramps;
e) Details of how event organisers will facilitate efficient processing and inspection of event patron vehicles within the site;
f) Details of demand management strategies to reduce car dependency for attending events, such as promoting the use of public transport by providing suitable connectivity at adjacent townships, airports and railways, promoting use of bicycles, ticket pricing incentives for carpooling, management of parking supply and the like; and
g) Measures to address and respond to the outcomes of a Performance report required under Condition B7 including updating Plans for subsequent events.

1.7.3 C10 – Traffic Control Plan

A Traffic Control Plan (TCP) for each event must be prepared by a suitably qualified and RMS accredited Work Site Traffic Controller, at least 60 days prior to the event. The TCP must be submitted to the Local Traffic Committee for endorsement and then to Council for approval prior to commencement of each event.

The TCP must address the following matters:

a) Be designed in accordance with the requirements of the RMS's Manual, Traffic Control at Work Sites Version 2, and the current Australian Standards, Manual of Uniform Traffic Control Devices Part 3, 'Traffic Control Devices for Works on Roads'.
b) The regulation of traffic must be authorised under the *Roads Act 1993* and the use of traffic control devices authorised under the *Road Transport (Safety & Traffic Management) Act 1999.*
c) Reduced speed zones approved by the RMS.
d) Special Event Clearways approved by the RMS.
e) Appropriate signage to prohibit parking in the surrounding road network and in the Yelgun rest area.
f) A Traffic Incident Management Plan that details a range of approved contingency measures capable of avoiding significant impacts on the level of service. The contingency plan must be fully documented and include emergency contact names and phone numbers.
g) Measures to address and respond to the outcomes of the Performance report required under Conditions B7, including updating Plans for subsequent events.

The TCP must be designed to achieve the following performance during bump in/out and event days:

a) All movements at the Yelgun interchange including merges and diverges need to operate at Level of Service C or better for delay;
b) The level of service for local traffic and through traffic on the Tweed Valley should not fall below
c) Level of Service D;
d) Queue lengths on the link road between Tweed Valley Way and the Yelgun interchange must be limited to a maximum of 70 metres;

e) The end of traffic queues on the interchange ramps must not be within 210 metres of the start of the ramp;
f) On site queuing is not to extend onto the Pacific Highway or the Tweed Valley Way; and
g) There is to be no impact on through traffic travel times of the Pacific Highway.

1.7.4 C45 – Car Parking Management

The proponent shall ensure that vehicles parking on the site are distributed in such a way that areas least affected by potential flood waters are utilised first.

1.7.5 C46 – Access for Emergency Vehicles

The proponent shall ensure that a satisfactory passage for emergency vehicles is provided to the site for all event types during the event, including bump-in and bump-out times.

1.7.6 C47 – Pedestrian Access from Day Parking Area

(1) The pedestrian access way from the day parking area to the event site is to be appropriately illuminated to achieve at least 0.2lux at ground level. The pedestrian access is to be patrolled regularly by security staff to ensure that patrons do not stray from the approved thoroughfare.
(2) The pedestrian access way from the day parking area to the event site is to be clearly signed at regular intervals providing appropriate directions, detailing the remaining distance to the event site, and outlining the need for patrons to stay within the designated area.

1.7.7 C48 – Disabled Access

Disabled access to, within and from the site must be in accordance with AS1428.1 (2009), or the most recent version.

1.7.8 C51 – Emergency Evacuation Plans

Emergency evacuation plans for flooding and bushfires must be available on site under the control of the site/event manager. This plan is to be located at each stage, at all exits from the site and at the site office. A copy is also to be given to all security personnel and patrons.

2.0 Fifth Medium Trial Event

This is the fifth year in the five-year trial period for North Byron Parklands (NBP) as an event site. This year, approval exists for one large trial event up to 32,500 which was held in July 2017, one medium trial event (anticipated to be up to 25,000 patrons) and one small trial event (up to 15,000 patrons). Falls 2013/14 was the first medium trial event to be held at the site and was held around New Year's 2013/14. Falls 2017/18 is the fifth medium trial event and is to be held around New Year's 2017/18.

2.1 Observations from previous Falls Festivals at the site

Falls Festival 2016/17 was a success from a traffic engineering perspective. All KPI's were observed to be complied with.

2.2 Traffic Management Approach for the Falls Festival 2017/18

During the previous Falls Festivals, it was observed that during the holiday period, background traffic volumes on Tweed Valley Way and Brunswick Valley Way did not increase significantly. Although traffic volume increases on the Pacific Motorway were monitored, correlation with increases on Tweed Valley Way and Brunswick Valley Way was minimal.

During the previous Falls Festival, traffic controllers were placed on standby to manage any congestion that may occur during arrivals. However, no congestion occurred and interference by traffic controllers was not required.

Traffic controllers were implemented at Gate C during the camping departure day with the successfully trialled 2-lane departure.

This year, traffic controllers are proposed to be used on the public road:

- at Gate C during the 2-lane camping departure;
- at Gate D for departure of vehicles from the southern carpark day parking and drop-off area's.

Although not required for traffic control, a reduced speed zone on Tweed Valley Way is proposed from approximately Yelgun Road to Jones Road. Free flow vehicle speeds on Tweed Valley Way are relatively high, in particular on the downhill section from Jones Road towards Gate B. Reducing the speed limit at the site frontage will improve safety with respect to traffic leaving the site as well as traffic queued in the right turn lane on Tweed Valley Way. This reduced speed zone is continued to Jones Road similarly as was done during previous festivals for service vehicles entering and exiting Jones Road.

A no stopping zone is proposed on Tweed Valley Way from the Link Road to Wooyung Road as well as along Wooyung Road. The purpose of this is two-fold:

- Eliminate parking by patrons not familiar with the area on Tweed Valley Way which is a high speed road;
- Improve tools to manage trespassers, in particular from Wooyung Road. During SITG 2015 a physical altercation occurred between a trespasser and a land owner on Wooyung Road. This incident illuminates the need to increase methods to limit trespassing. No-stopping along Wooyung Road will allow the issue of infringement notices for vehicles stopped on the side of the road, which in particular will aid the Police to combat trespassing from Wooyung Road.

Similar to SITG 2017 & FFB 2016, patrons travelling along the Pacific Motorway will be encouraged to exit the Motorway at Pottsville and at Brunswick Heads to alleviate pressure on Yelgun Interchange. Experience with previous events has shown that this method is particularly effective for campers who are not as familiar with the local road network as local day patrons.

1.3 Temporary Bus Bay Brunswick Heads

The Traffic Control Plan, includes a plan for Temporary Bus Bay Park Street, Brunswick Heads. The purpose of this plan is to provide a safer bus stop for the expected increase in bus patronage due to the Falls Festival.

It is proposed that the Park Street bus stop will also be utilised by the Falls Shuttle bus service. The implementation of the temporary bus bay plan includes:

1. Falls Festival intends to provide a security guard at this bus stop to ensure crowd control and to keep the footpath adjacent to the bus stop passable.
2. Falls Festival will also provide a clean-up team to service this area. This would ensure that the bus stop area remains clean and tidy so that the Brunswick Community and Council are not left with a clean-up problem as a result of the additional bus patronage due to the festival.
3. Water filled barriers, as per the Temporary Bus Bay Plan, are proposed to provide added safety for patrons. The need for these barriers is because the footpath at the location of the bus stop is raised and there is a garden bed, both of which reduce the available footpath space for persons waiting for buses.

This plan has been prepared to address a request from local shop keepers in Park Street that sought to have additional facilities for the increased bus patronage as a result of the similar festivals in the past.

1.4 Stacked parking and camping

It is proposed to carry out stacked camping and parking at the Falls Festival Byron. This method has been tried and tested at the Falls & Splendour festivals in Byron. A schematic figure of this arrangement is depicted in Figure 2.

Figure 2 - Stacked camping and parking

The process of stacked parking and camping is as follows.

As camper vehicles arrive, they are directed to a certain area, where they will be parked behind the car in front of them and parallel to vehicles besides them. The patrons then set up their tent next to their car. An aisle is kept free between two rows of tents for pedestrian and firefighting purposes.

After the patrons have parked their car, it will not be physically possible to leave the campgrounds in their own car before the car in front of them has done so. Thus, there will be no private car traffic generation by 2 and 3 day campers during event days. Private car traffic generation by campers resulted in significant traffic volumes during the festival days of the previous Falls festival. This issue has thus been resolved.

Additional charter buses will be sourced by festival management to ensure sufficient transport capabilities are available during the festival, in particular for day trippers to Pottsville, Brunswick Heads and Byron Bay. We understand that additional bus trips are scheduled for Brunswick Heads and less trips for Byron Bay to alleviate the congestion at Byron Bay and improve the economic benefits to local business in Brunswick Heads.

Internally, as the separation between car parking and camping has been removed (as is depicted in Figure 3), there is increased flexibility for directing traffic flows through the site. Any congestion due to ticketing issues or wet weather can thus be more easily negated.

It should be noted that this system of stacked parking and camping fundamentally differs from the combined parking and camping that caused the congestion during SITG 2013. During that festival, there was insufficient infrastructure in place to direct traffic flows and also the camping and parking was ad-hoc, not structured. The proposed structured parking/camping system for the coming Falls Festival at Byron has been tried and proven at the Falls festival in Lorne for years and also for the FFB16 and SITG16.

Festival management will liaise with the NSW Police to encourage drug searches to occur after vehicles have been parked in order to prevent any hold ups during peak arrival periods. Ticketing by mobile ticketing stations also occurs after vehicles have been parked.

Lastly, we have been informed that the stacked parking/camping system is likely to improve patron experience on the campers departure day. Patrons will better understand that they cannot leave the site until the vehicle in front of them has left, thus enhancing acceptance of delays.

In summary the benefits of the structured stacked parking/camping system are as follows:

- Elimination of private vehicle traffic generation by day trippers during the festival;
- More efficient use of space;
- Improved convenience for campers, having the tent set up next to their car;
- Improved patron experience during the departure day.

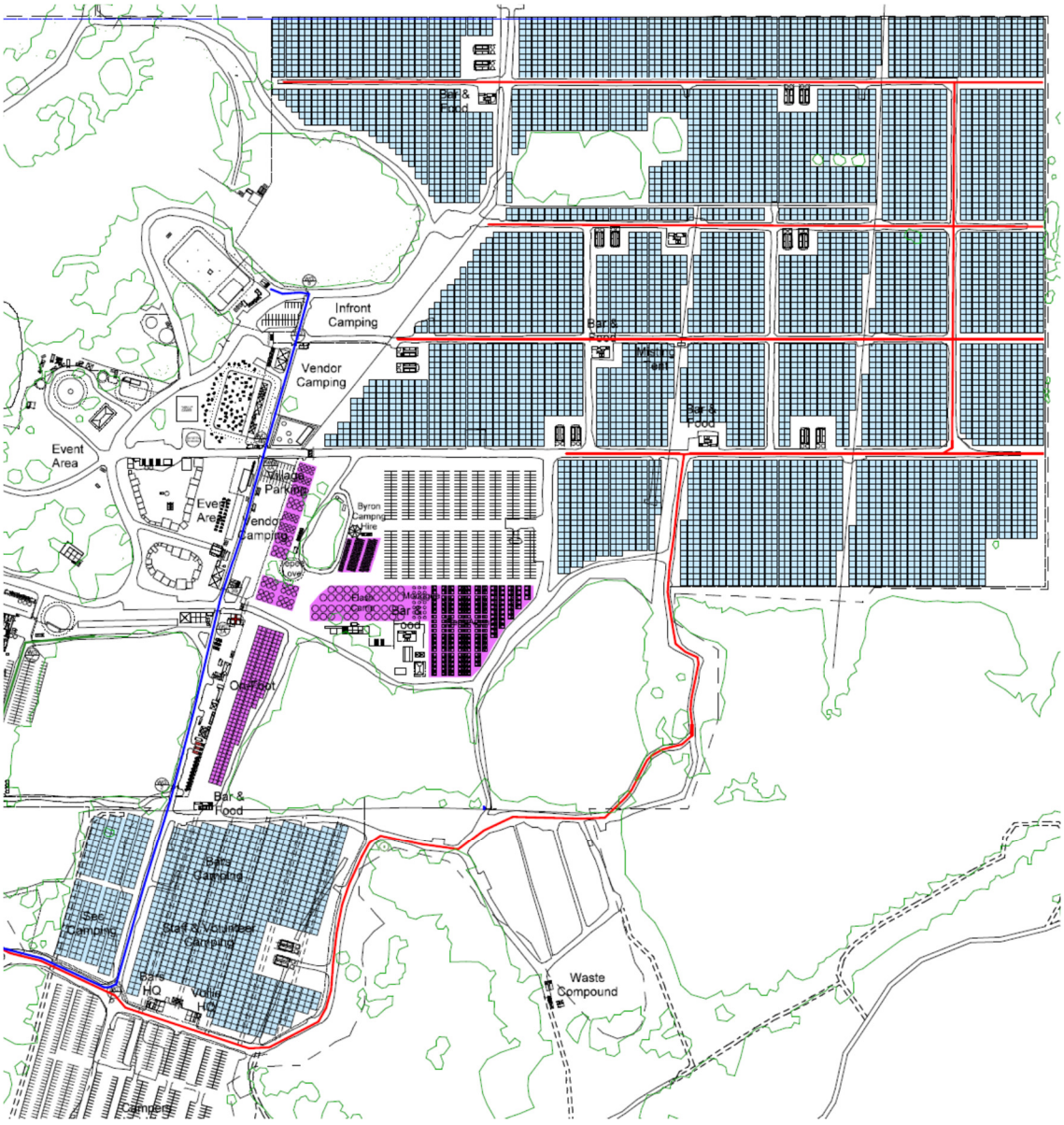

Figure 3 - Stacked parking/camping marked in blue

3.0 Traffic impact modelling

No traffic impact modelling has been undertaken for the 2017/18 event.

The upgrading of the Link Road intersection during 2016 has relieved the major bottleneck for traffic arriving at the festival site. The recent Falls and Splendour in the Grass events resulted in no known traffic KPI breaches or traffic safety issues around the Link Road, and therefore no impacts on the Pacific Highway.

Observations during camping arrivals at last years Falls Festival resulted in no concerns regarding the Gate C intersection. With up to 1000 more vehicles arriving for camping at this years event over 2 days, the existing intersection arrangement and traffic control plan is considered sufficient.

If due to the traffic volumes the Spine Road would experience congestion, the following mitigation measures could be employed:

- Use southern car park for a snake or for temporary parking during a peak;
- Close southbound traffic on Spine Road and create a 2-lane one-way northbound situation during peak ingress using cones or bollards. Sufficient staff and material are to be present on site to instigate this if required.

Based on the previous modelling carried out for this event, the public road network has the capacity to cope with the traffic scenarios modelled for this event. The Spine Road would need to be monitored closely during the peak ingress period to be able to enact mitigation measures if the Spine Road reaches capacity.

4.0 Contingencies and emergency evacuation

North Byron Parklands has constructed roads within the site which are above flood level. North Byron Parklands has machinery, such as a large tractor, to tow vehicles which may have broken down on the internal road system. The Falls staff will be trained in the need to keep the internal roads clear, and if necessary arrange a contra flow situation, to temporarily pass a broken down vehicle.

Any contingency measures carried out by relevant authorities are to ensure the safety of any persons associated with the cause of the contingency measures to be needed to be carried out, as well as the efficient operation of the road network. It is paramount that queuing on the Pacific Motorway, Tweed Valley Way and Brunswick Valley way be prevented at all times.

As the Police have the authority to take control of the site in an emergency the Traffic Control Plan will then be overridden as the Police see fit.

As part of good management of the operation of this Traffic Control Plan, it is necessary that all relevant staffed be adequately briefed on the possibility of the need to evacuate the site in an emergency.

In the case of bushfire and flooding there is some warning time that is available to the Police, to give them the opportunity to prepare to evacuate the site.

Also, as the site has its major entry and exits points south of Jones Road, it will be necessary for the appointed traffic control staff to be on duty during and emergency evacuation, to quickly and efficiently move patrons through the site to the exit points.

The evacuation strategy by the Police is to take into account time of day, site occupancy and suitability of access roads. If the site is full and the call for evacuation is made by the Police, orderly egress commencing with the day patrons, followed by the campers, will be necessary.

The draft emergency evacuation plan for fire, nominates that patrons congregate in "assembly points" and from there the whole site would then be evacuated. This would be at the discretion of the LEMO Police Controller.

The draft emergency evacuation plan for the fire addresses different evacuation scenarios. In instances where evacuation by vehicle is available, evacuation is to the various entry/exit points. In instances where vehicle evacuation of the site is not appropriate, emergency assembly locations within and adjoining the site are nominated for site occupants to assemble under supervision.

Emergency vehicle access is available from Gate C, Gate D, Jones Road and Wooyung Road.

Although no traffic controllers are required to manage traffic under normal conditions, traffic controllers would need to be on call to assist in managing queues during any queuing on the public road that may occur as a result of unforeseen circumstances. Back of queue warning vehicles would need to be available to warn inbound vehicles on the public road of any queues ahead. It is the responsibility of the festival management to ensure the public road is monitored and potential queuing is predicted in advance of any queuing appearing.

5.0 Monitoring for traffic management during the festival

Traffic monitoring is required to provide input for the annual performance report under the current approval for the site.

It is proposed to install classified traffic counters at the locations listed below, at least two weeks before the Festival. These counters will be used to gain a confirmation of the background traffic levels, and then the increase that can be attributed to the Festival.

- North bound off ramp at Yelgun;
- South bound off ramp at Yelgun;
- Tweed Valley Way to the North of Jones Road;
- Tweed Valley Way between Yelgun Road and Billinudgel Road;
- Brunswick Valley Way opposite the Yelgun Rest Area
- Spine Road

On-site surveys will need to be carried out to estimate the vehicle occupancy for camper vehicles. Data on the use of any bus services is to be provided by Festival Management after the event so that mode-share calculations can be carried out.

6.0 Risk assessment

A risk assessment for the traffic operation of this festival is described in this chapter. 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 (KPI's) 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.

Additional risk reducing measures such as contingency plans and creating a temporary low speed environment at high risk locations are part of the traffic management tools recommended in this Traffic Management Plan.

Lastly, there are risks due to hazards that might occur that are outside the control of the event management or traffic controllers. These hazards would include extreme weather conditions and crashes on the public road due to drivers' negligence. In order to reduce the risk effect 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. We recommend that after all relevant staff, consultants and contractors 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 event management manual. This risk management meeting shall include:

- NBP General Manager
- Falls Byron General Manager
- Event Traffic Manager
- Traffic Engineer
- Traffic Control Manager
- Police representative
- Ambulance representative
- RFS representative
- RMS representative
- Council representatives (BSC and TSC)

The classification of risks for the purpose of this risk assessment is depicted in

Figure 4 and associated definitions are provided in Table 2.

Figure 4 - Risk classification matrix

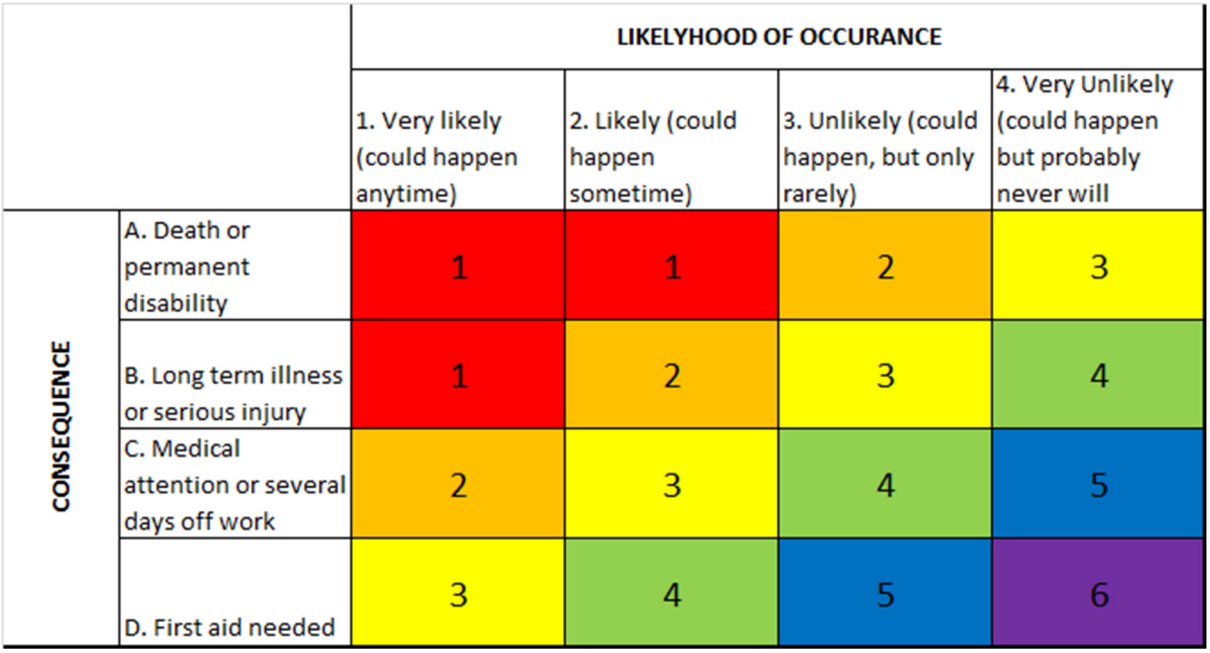

Table 2 - Risk definitions

Risk Class	Time Frame for Corrective Action	Role/Responsibility
Class 1 – Extreme risk	Immediate action required	Senior management – Executive
Class 2 – Very high risk	Immediate action required	Senior management
Class 3 – High risk	Immediate action required	Senior management
Class 4 – Medium risk	Close-of-business of current day	Management responsibility must be specified
Class 5 – Low risk	Within 24 hours	Manage by routine procedures
Class 6 – Very low risk	Within 48 hours	Manage by routine procedures

The risk assessment is provided below.

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RISK ASSESSMENT												
				Initial Risk Rating						Residual Risk Rating		
Activity	Hazard description	Direct consequence	Potential indirect consequence	L	C	Risk Class	Method for risk mitigation	Responsible person formitigation implementation	Person responsible for ensuring sufficient funding to enact mitigation	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 proper implementation of traffic control plan	Traffic control manager	Festival General Manager	4	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 sufficient staff for vehicle processing	Parking manager	Festival General Manager	4	A	3
							Ensure adequate equipment to enable staff to process vehicles safely and efficiently	Parking manager	Festival General Manager			
							Enactment of snake in southern car park to create additional vehicle storage	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 Engineer	Festival General Manager	4	A	3
							Contingency plans available for enactment if needed	Traffic Engineer and 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 Engineer	Festival General Manager	4	A	3
							Contingency plans available for enactment if needed	Traffic Engineer and 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	Police	NSW Police Force	4	A	3
							Provide required aid to persons involved	Emergency services	NSW Ambulance Service			
							Manage traffic at crash site	Police	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	4
							Ensure sufficient visibility through corners	NBP General Manager and Event Traffic Manager	NBP shareholders and 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	Police	NSW Police Force			
							Provide required aid to persons involved	Emergency services	NSW Ambulance Service			
							Manage traffic at crash site	Police	NSW Police Force			
							Manage back of queue	Traffic control manager	Festival General Manager			
	On-site vehicle break down	Traffic congestion and queue growth	Collision on public road	2	A	1	Remove vehicle from traffic lane	Event traffic manager	Festival General Manager	4	B	4
							Enactment of snake in southern car park to create additional vehicle storage	Event traffic manager	Festival General Manager			
							Traffic Management Plan to include low speed zones in high risk areas	Traffic Engineer	Festival General Manager			
							Traffic controllers on public road to control back of queue	Traffic control manager	Festival General Manager			
	Queue 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 Engineer and 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 and Event Manager	NBP shareholders and Festival General Manager	2	D	4
							Fire identification and fighting	RFS and Event manager	RFS and Festival General Manager			
	Severe wind, rain and/or hail	Sudden stop of traffic flow and uncontrolled placing of vehicles on traffic lane and road shoulder	Collision	2	A	1	Monitor weather and issue sever weather warnings to staff, contractors and patrons	Event manager	Festival General Manager	3	B	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			

7.0 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.

- Byron Bay Police Force,
- The local RMS office at Grafton,
- The Byron Bay Ambulance Service,
- The Rural Fire Service, and
- Byron Shire Council.

8.0 Audit checklist

Any Traffic Controllers shall complete the TCP Audit Check list 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 TCP have been in place for the full duration of the event.

AUDIT CHECKLIST					
Date:		**Time:**	**Auditor:**		
Office/Company:			**Site Supervisor:**		
Location:					
Nature of Activity:					
Duration of Activity:					
Road Configuration:					
1	**Provision for Activity**		**YES**	**NO**	**N/A**
1.1	Has an approved TCP been provided				
2	**Implementation**				
2.1	Are all signs & devices installed in accordance with TCP?				
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	TCP, including details & modifications				
3.2	Direction to Restrict (DTR)				
3.3	Traffic controllers certification				
4	Has the Signage been covered for non RTA Controllers operation as specified on the TC Plan				
Comments/Findings					
Recommendations/Corrective Action					
Auditor (signed)			Site Supervisor:		

9.0 Responsible organisations contact persons and signatures

The following persons have read and understand this Traffic Management Plan prepared for The Falls Festival 2017/2018, to be conducted at the North Byron Parklands, Tweed Valley Way, Yelgun, and will implement this plan.

Senior Accredited Traffic Controller:
Name of responsible person who can be contacted on the following phone numbers:

Name: ……. Signature: ……

Phone: …….. Mobile Phone: …….

Festival Site Manager:
Name of responsible person who can be contacted on the following phone numbers:

Name: ……. Signature: ……

Phone: …….. Mobile Phone: …….

Festival Promoter:
Name of responsible person who can be contacted on the following phone numbers:

Name: ……. Signature: ……

Phone: …….. Mobile Phone: …….

At the latest 30 days prior to the event, a comprehensive Traffic Protocol shall be issued by the Supervising Traffic Engineer. This Traffic Protocol shall provide the Senior Accredited Traffic Controller with a concise description of the traffic control procedures that have been laid out in this TMP. It will also contain a copy of a completed RMS Special Events Checklist (in accordance with the RMS Guide to Traffic and Transport Management for Special Events). It will also detail any emergency procedures that have been adopted.

10.0 Approval condition compliance summary table

This TMP has been prepared in accordance with the RMS Guide to Traffic and Transport Management for Special Events. **Table 3** below summarizes the compliance with the conditions of approval as listed in chapter 1.

Table 3 - Condition compliance summary table

Condition	Compliance achieved (y/n)	Location
B4 – Traffic management and parking	y	Chapter 2 and 3
C9 – Transport Management Plan	y	Chapters 2 and 3
C10 – Traffic Control Plans	y	Appendix B and C
C45 – Car Parking Management	y	Chapter 2
C46 – Access for Emergency Vehicles	y	Chapter 8
C47 – Pedestrian Access from Day Parking Area	y	Appendix A
C48 – Disabled Access	y	Appendix A
C51 – Emergency Evacuation plans	y	Chapter 8

11.0 Chain of command

The Supervising Traffic Engineer (STE) will be present at the site or the surrounding road network at the times of event traffic activity.

The responsibilities of the STE are:

- Certification of the installation and proper implementation of TMP and TCP,
- Liaison with Falls Festival management and Site Manager,
- Liaison with Traffic Control Supervisor,
- Liaison with Camping Manager,
- Liaison with Parking Manager,
- Liaison with Council and RMS,
- Liaison with NSW Police,
- Design and Modification of existing approved traffic control plans when required,
- Certification of new traffic control plans when required.

Changes to traffic control plans can only be made by a certified orange card holder.

The STE will supervise the operation of the TMP and TCP and ensure that the Traffic Controllers are advised of their roles in the traffic management.

The Event Management would be expected to contact the supervising traffic engineer to discuss any traffic matters. The success of the implementation this TMP depends on a coordinated managed traffic approach and this will be achieved by following a chain of command protocol. This will also be reinforced in the Protocol issued to the contracted traffic control company.

12.0 Conclusions and recommendations

With demand management and close supervision of the traffic and parking it is possible to manage the 2017/18 Falls Festival at Yelgun such that it does not adversely impact on the Pacific Motorway or the local road network, outside the levels nominated in the development consent.

The KPI's nominated in the project approval can be met when the festival is managed as per this TMP.

An appropriately qualified traffic engineer should be present at critical times to enable effective evaluation of the implementation of the TMP and traffic control plans and make adjustments where required.

A designated person from Festival Management should also be the point of contact, with respect to traffic, camping patrons entry and day parking issues, buses and taxis, and for the liaison between traffic controllers, parking attendants and camping operators, RMS, Police, Byron Shire Council and Festival Management.

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

REFERENCES

Splendour in the Grass 2013 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 3rd April 2013, Nashua

Splendour in the Grass 2013 Traffic Monitoring Program, Greg Alderson and Associates Pty Ltd, 2nd May 2013, Nashua

Splendour in the Grass 2013 Traffic Management Brief, Greg Alderson and Associates Pty Ltd, 13th May 2013, Nashua

Splendour in the Grass 2013 Traffic Evaluation Report, Greg Alderson and Associates Pty Ltd, 16th of August 2013, Nashua

Splendour in the Grass 2014 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 3rd April 2013, Nashua

Splendour in the Grass 2014 Traffic Monitoring Program, Greg Alderson and Associates Pty Ltd, 26th May 2014, Nashua

Splendour in the Grass 2014 Traffic Management Brief, Greg Alderson and Associates Pty Ltd,2nd June 2014, Nashua

Splendour in the Grass 2014 Traffic Evaluation Report, Greg Alderson and Associates Pty Ltd, 28th August 2014, Nashua

Splendour in the Grass 2015 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 23rd April 2015, Nashua

Splendour in the Grass 2016 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 23rd April 2016, Nashua

Splendour in the Grass 2016 Traffic Evaluation Report, Greg Alderson and Associates Pty Ltd, 5th October 2016, Nashua

Falls Festival Byron 2013/14 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 26th September, Nashua

Falls Festival Byron 2013/14 Traffic Monitoring Program, Greg Alderson and Associates Pty Ltd, 20th November 2013, Nashua

Falls Festival Byron 2013/14 Traffic Management Brief, Greg Alderson and Associates Pty Ltd, 13th December 2013, Nashua

Falls Festival Byron 2013/14 Traffic Evaluation Report, Greg Alderson and Associates Pty Ltd, 5th February 2014, Nashua

Falls Festival Byron 2015/16 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 2nd October 2015, Nashua

Falls Festival Byron 2015/16 Traffic Evaluation Report, Greg Alderson and Associates Pty Ltd, 16th February 2016, Nashua

Falls Festival Byron 2016/17 Traffic Management Plan, Greg Alderson and Associates Pty Ltd, 28 September 2016, Nashua (Refers to this report and included Traffic Control Plan)

North Byron Parklands – Traffic Impact Assessment, Parsons Brinckerhoff Australia Pty Ltd, July 2010, Sydney

Traffic Control at Worksites, Roads and Traffic Authority NSW, version 4.0, June 2010

Splendour in the Grass Traffic Management Plan, Adam Pekol Consulting, April 2011

Guide to Traffic and Transport Management for Special Events, RTA Transport Management Centre, August 2006

Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis, Austroads Inc., Sydney, August 2009

Highway Capacity Manual 2010, Transportation and Research Board of the National Academies, 2010

APPENDIX A – Event and camping plan

APPENDIX B – Traffic control plans