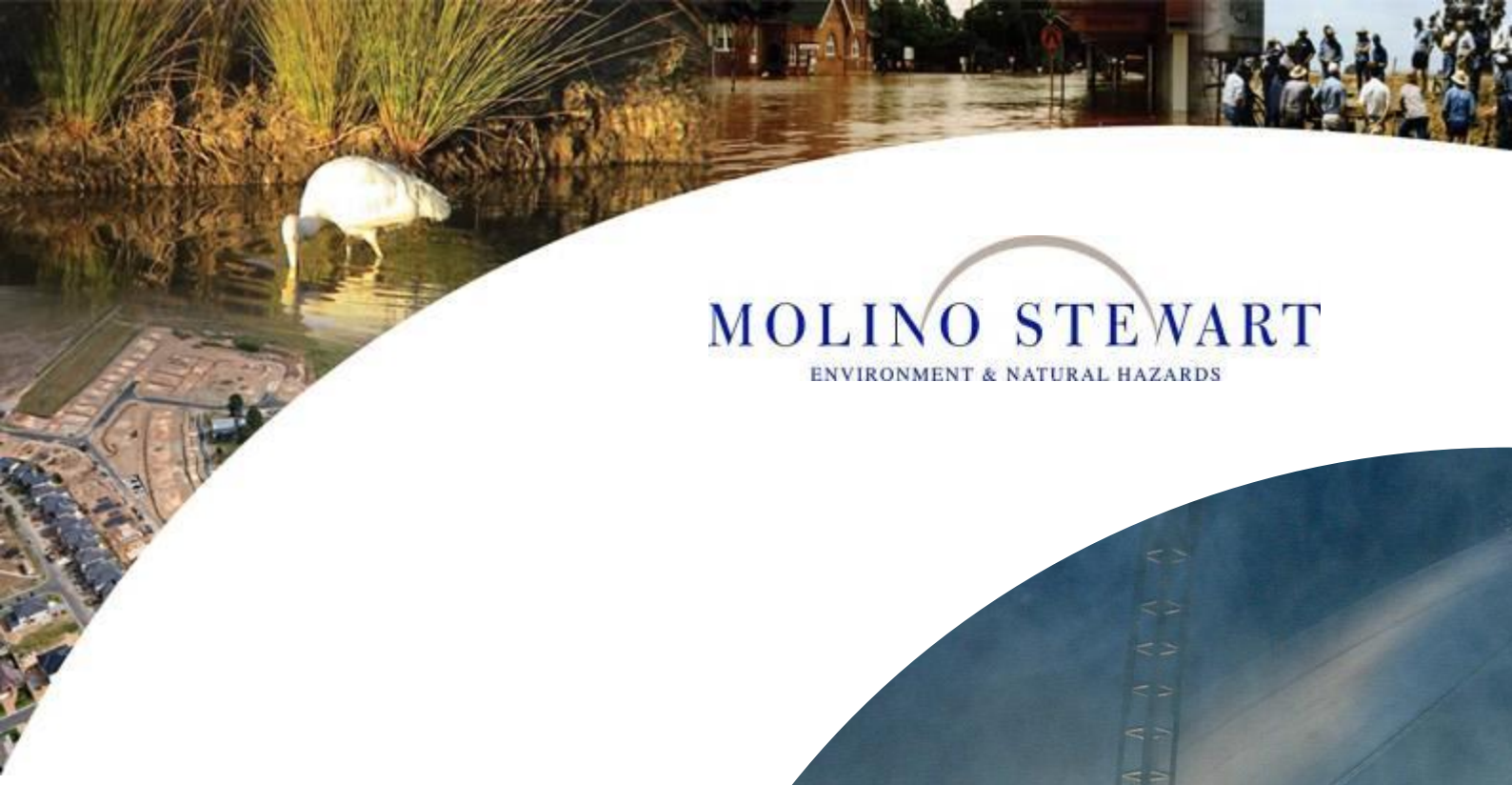

MOLINO STEWART

ENVIRONMENT & NATURAL HAZARDS

North Byron Parklands

Billinudgel Property Pty Ltd

North Byron Parklands FRMP

Flood Risk Management Plan 2020

North Byron Parklands FRMP

FLOOD RISK MANAGEMENT PLAN - 2020

for

North Byron Parklands (Billinudgel Property Pty Ltd)

by

Molino Stewart Pty Ltd

ACN 067 774 332

SEPTEMBER 2020

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Document Approval

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Position	Principal
For North Byron Parklands Billinudgel Property Pty Ltd	
Name	Mathew Morris
Position	General Manager

Contents

Appendices

List of Tables

List of Figures

1. background

The North Byron Parklands (Parklands) project provides a purpose built sustainable cultural arts and music venue hosting a range of events, which may include music festivals, field days, jamborees, gymkhanas and conferences, together with smaller events such as outdoor movies and a wide range of community events.

Parts of the site can flood and accordingly, on request of the Department of Planning, Industry and Environment, a Flood Risk Management Plan (FRMP) was prepared by Molino Stewart in 2013 in consultation with local emergency services.

The original FRMP was designed to cater for a maximum of 30,000 patrons, and demonstrated that the site can be safely evacuated during events up to and including a Probable Maximum Flood (PMF) event with no unacceptable risk to patrons or staff.

The site has been operational since 2013 for large outdoor events, having obtained approval from the NSW Planning Assessment Commission (PAC) under the conditions of a 5 year trial period, that was due to expire at the end of 2017 and which was then extended to August 2019.

On 13 March 2019, the NSW Independent Planning Commission (the Commission) approved the development application from Parklands under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), for the ongoing use and development of the cultural events site (SSD 8169).

Amongst other things, the new development consent allows Parklands to undertake outdoor cultural events on the site for up to 20 event days per year, including:

- 2 large events over up to 5 event days each, including:
    - a large winter event (ie. Splendour), with up to 50,000 patrons per day; and
    - a large summer event (ie. Falls), with up to 35,000 patrons per day;
- 3 medium event days, with up to 25,000 patrons per day;
- 5 small event days, with up to 5,000 patrons per day; and
- 2 minor community event days, with up to 1,500 patrons per day.

With respect to the 2 larger events the 2019 development consent provides a glidepath to grow patron numbers based on a number of key performance indicators.

Specifically, this growth is attributed to additional day patrons as the approved number of campers is 25,000 and 30,000 for Splendour in the Grass (SITG) and Falls Festival Byron (FFB) respectively.

One unintended consequence of these patron number increases is the need to increase the festival area precinct where stages, bars, cafes, food vendors and markets are located to accommodate additional patrons.

Such an expansion of the festival precinct means a corresponding reduction in the campgrounds. Reducing the venue's ability to camp approved numbers of patrons has implications for traffic management and potential impacts on the surrounding road network.

To remedy this issue, Parklands is seeking to expand the campgrounds north of the existing site.

As with the existing campgrounds, campers would be accommodated on site in tents and movable dwellings such as camper vans, which would be either supplied by event organisers or brought onto site by campers themselves. Unlike the existing campgrounds, all facilities such as toilets and showers would be brought onto site for the duration of the event only.

The maximum number of campers would remain the same as currently approved (ie. 25,000 people for SITG, 30,000 people for FFB and for Medium and Small Community events, up to the event patron capacity).

Camping would continue to be permitted on event days and for up to one day prior to and one day after event days, which is consistent with the existing development consent.

Importantly, the same patron numbers (day and camping patrons) and the number of permittable event days would remain as currently approved under the existing development consent. The only change would be an adjustment to the Land Use Structure Plan to increase the overall size of the "Event Area".

The 2017 FRMP has therefore been modified to cater for the increased camping footprint.

2. The Venue and Events

Site Description

(a) Locality

The project site is located on the eastern side of the Pacific Highway in the northeast corner of Byron Shire, NSW. The site is about 20 minutes' drive north of Byron Bay and approximately 25 minutes' drive south of Coolangatta. The site locality is shown in Figure 1.

The land is located adjacent to the Pacific Highway, the national highway, and Tweed Valley Way, the regional level road connecting the north of Byron Shire to Murwillumbah within the Tweed Valley. The site entrance is located with convenient access to the Yelgun interchange of the Pacific Highway.

The site also has an all-weather two-way emergency access road form the north of the property to Wooyung Road. This road is situated above Q100 levels.

This FRMP refers to the area addressed by the state relevant application, which is approximately 271 hectares in size. Of this area, about 160 hectares will be utilised for events including parking, camping, staging, etc. The site is composed of four major zones: Office of Environment and Heritage nature reserve extensions, habitat areas, managed parklands and non- habitat areas, which will be used for events and conferences.

The Parklands site is located both to the north and south of Jones Road. The property is bounded on its western margin by the Tweed Valley Way and Billinudgel Nature Reserve (BNR) adjoins to the south and centrally within the site.

(b) Site Layout

The general site layout is shown in Figure 2 and comprises an event area north of Jones Road and a parking area and main entry south of Jones Road.

a) Event Areas

The 'Event Area' comprises an area of the northern part of the site. The 'Event Area' footprint contains the public (performance) area, backstage area, patron camping, patron car parking, staff camping and parking. A resource centre and the bus terminus are also located within the event area.

Large parts of this area north of Jones Rd have been labelled as event area to allow for different uses and layouts. Therefore, within this area, there could be a mix of camping, camping and parking, parking, staging, market stalls, restaurants, etc.

This event areas layout will change with different sized events. Events will include a standard layout

where the performance area will be entirely fenced (1.8m high x 2.4 metre wide temporary fencing panels that slot into concrete footings and are secured at the top by way of a bracket).

b) Parking

There are two dedicated parking areas across the site: the southern car park and the northern car park.

The southern car park is defined in Figure 2 on the event area map (blue-hatched area) and would mostly service day visitors who would be driving their personal vehicles to and from the site each day. The southern car park currently has a capacity of 2,100 cars. Approval has been granted to add an extra 5,040 car parks. However due to the success of the public transport system provided at recent events, the department has agreed to indefinitely postpone these works subject to meeting agreed traffic KPIs.

The northern car park is located south of the bus turnaround and has a capacity of 900 cars. It is envisaged that in most events this area will be used as parking for workers and statutory staff (police, emergency responders). However, this area may be used for campers in the largest events (e.g. 50,000 patrons).

In addition to the above mentioned dedicated car parks, other areas across the north-eastern portion of the site will be used as camping ground, hosting vehicles and tents. The largest of these mixed-use areas is located at the northern end of the site. The total capacity of these mixed-use areas is 5,974 vehicles.

c) Conference Centre

A conference centre has been approved and is yet to be developed in the north-western part of the site, north of the amphitheatre and south-west of the dam (**Error! Reference source not found.**). The centre will be used to undertake events and functions in a manner that is generally consistent with the approved concept plan. Functions in the conference centre may include a range of events such as corporate functions, conferences, celebrations, or health and wellbeing retreats.

The conference centre would operate year-round, and cater for up to 180 patrons per day. Accommodation would be provided for up to 120 guests a day in 30 on-site cabins. Accommodation would be limited to guests associated with functions and events only, and would be permitted on event days and for up to one day prior to and one day after event days.

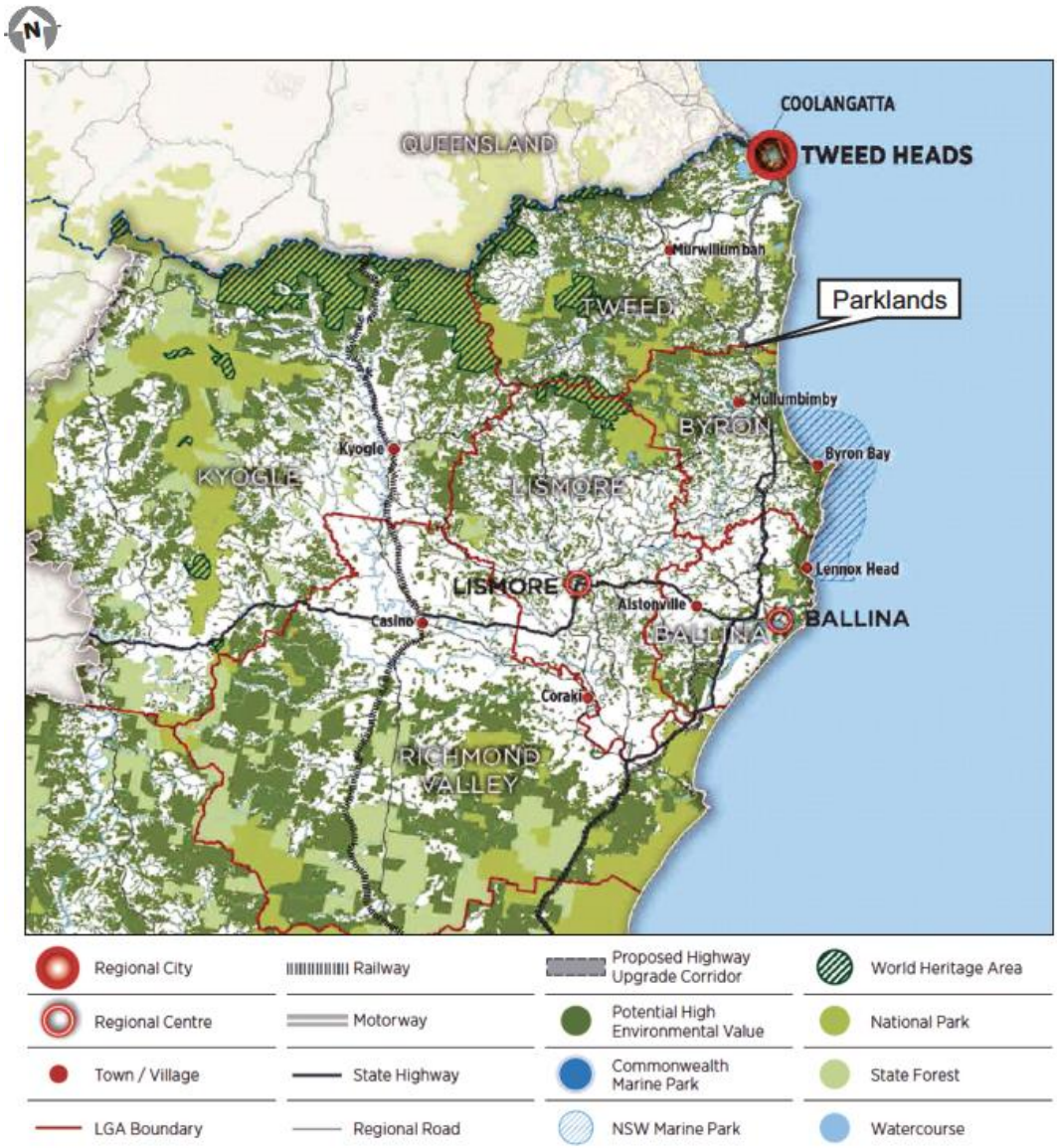

Figure 1: Site Locality (source: Planners North, 2020)

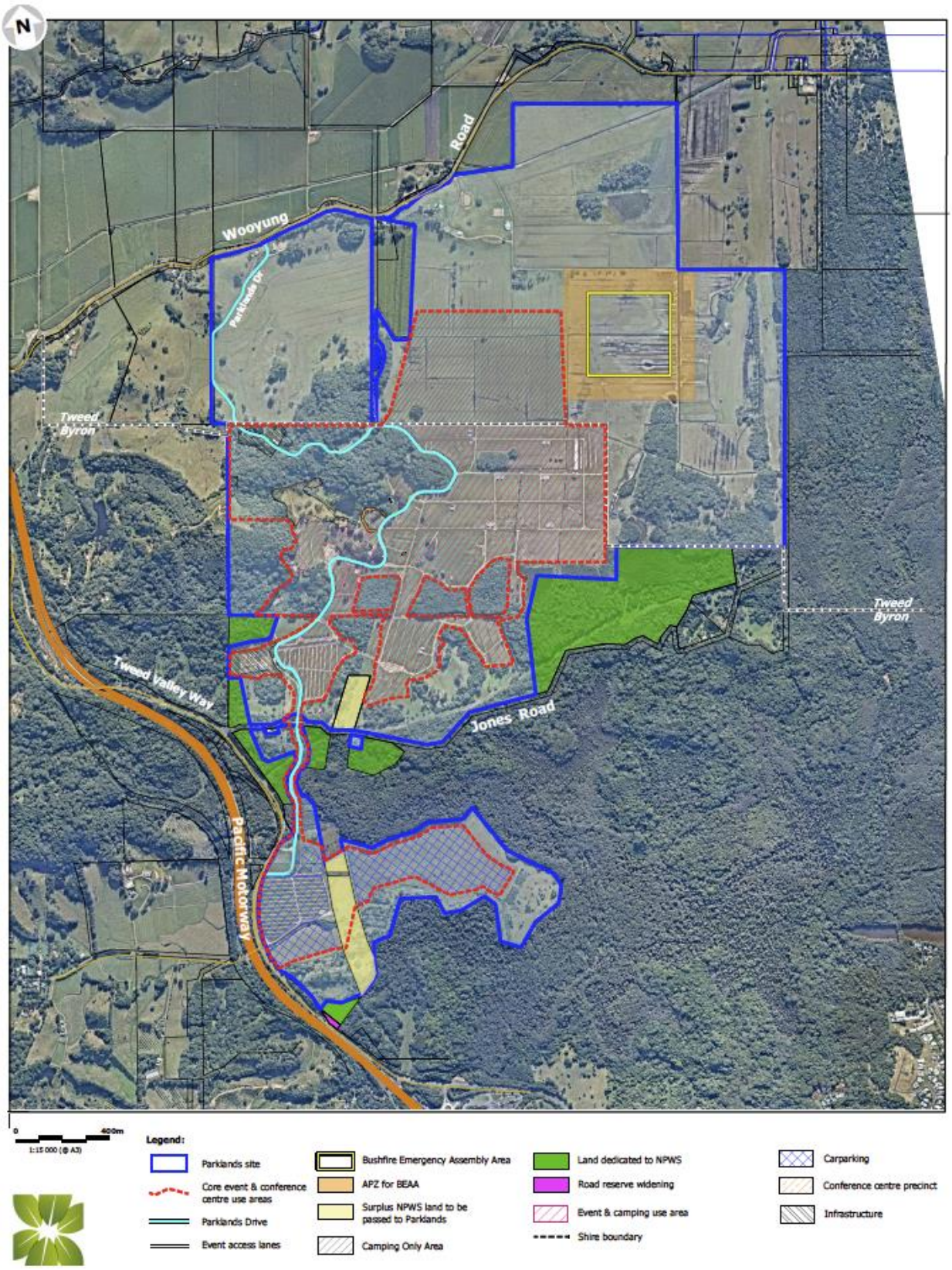

Figure 2. General site layout (Source: Planners North, 2020).

(c) Topography and Drainage

Hydrologically, the site is split into two sections, divided by Marshalls ridge along which Jones Road runs.

To the north of Jones Road are the proposed main entertainment area and camping grounds as well as the proposed conference centre. The majority of the northern area is within the Crabbes Creek floodplain, which itself is part of the Mooball Creek catchment.

To the south of Jones Road is a proposed car parking area (for events with more than 20,000 patrons), patron registration facilities and shuttle bus zone. This southern area is located on the Billinudgel and Yelgun Creek floodplain, which is a tributary of Marshals Creek.

The bulk of the land is in the 0 – 20% slope range. Some of the foot slopes are in the 20 – 33% range and steeply-sloping land occurs only in a very small part of the site.

Events

Events involve the temporary gathering of people for cultural purposes. Events may include festivals, music concerts, jamborees, gymkhanas, field days, art exhibitions and installations; movies or performances for orchestras, opera and the like.

(d) Size of Events

Approval has been granted to undertake outdoor cultural events on the site for up to 20 event days per year, including:

- Two large events over up to 5 event days each, including:
    - a large winter event (i.e. Splendour in The Grass), with up to 50,000 patrons per day; and
    - a large summer event (ie. Falls Festival Byron), with up to 35,000 patrons per day;
- Three medium event days, with up to 25,000 patrons per day;
- Five small event days, with up to 5,000 patrons per day; and
- Two minor community event days, with up to 1,500 patrons per day.

The approved development consent provided a glide path for the staged increase in overall capacity for SITG and FFB based on key performance indicators as follows:

- STAGE 2: SITG event increasing to 42,500 patrons (subject to meeting KPIs for the 35,000 event) and FFB event increasing to 30,000 patrons (subject to meeting KPIs for the 25,000 event);
- STAGE 3: SITG event reaching 50,000 patrons, (subject to meeting KPIs for the 42,500 event), and FFB event increasing to 35,000 patrons, (subject to meeting KPIs for the 30,000 event);

Currently, Parklands has secured stage 3 capacity for both events. However, the maximum allowable number of campers is still fixed at 25,000 for SITG and 30,000 for FFB.

Table 1 shows the number of events per year addressed by the state significant application and this FRMP, including the relevant duration, with bump-in and bump-out days.

A five-day event involves a camper bump-in day prior to the first event day, where campers would be allowed to enter the site (it is expected that about 70-80% of campers would arrive on this day).

The bump-in period for the larger events would involve thousands of vehicle movements during the camper bump-in day immediately prior to the event opening.

It should be noted that the event size in Table 1 is determined by the number of paying patrons only, while workers and regulatory personnel are not included.

The total number and category of people expected to be on site in each size event is summarised in Table 2.

Table 1. Events size and duration

Event size (number of patrons per day)	Events per Year	Duration (days)		
		Event	Bump-in	Bump-out
Up to 1,500	2	1	1	1
Up to 5,000	5	1	2	2
Up to 25,000*	3	1	7	4
	2	2	7	7
	1	3	7	7
Up to 35,000	1	5	21	14
50,000	1	5	21	14

** the 25,000 patron events can be organized as three one-day events, or two events of which one is a two-day event and one is a one-day event, or a single three day event. In all cases, the maximum number of patrons per day would be up to 25,000.*

Table 2. Number and category of people on site in each event

Event Type:	**Number of Attendees**		
	Maximum Number of Patrons (including Campers)	Maximum Number of Campers	Other Attendees
Large Winter Event	50,000	25,000	Up to 400 complimentary ticket holders; Up to 7,450 staff
Large Summer Event	35,000	30,000	Up to 400 complimentary ticket holders;Up to 4,890 staff
*Medium Events**	25,000	25,000	Up to 400 complimentary ticket holders;Up to 3,850 staff
Small Community Events	5,000	5,000	Up to 250 staff
Minor Community Events	1,500	1,500	Up to 100 staff

** the 25,000 patron events can be organized as three one-day events, or two events of which one is a two-day event and one is a one-day event, or a single three day event. In all cases, the maximum number of patrons per day would be up to 25,000*.

(e) Traffic and Parking Volumes

Table 3 shows the expected number of vehicles on site during each size event. The number of cars moving to and from the site and parking on-site during the bump-in and bump-out periods prior to and following an event is variable and depends on the type and scale of event in question and the public transport services put in place by the event.

In the larger events that offer the possibility to camp on site, the north camping area would fill up first with all of the campers' cars. Once the capacity of these areas is reached, additional campers would be asked to leave their cars in the southern car park and catch the shuttle or walk to the camping site. The northern car park would accommodate vehicles of regulatory staff and some workers, while the remainder of daily patrons would park their cars in the southern car park. It should be noted that larger events also utilise satellite parking facilities at the Mullumbimby football grounds for workers. Workers use regular shuttle bus services to get to and from the event site during event days. Taking into consideration the location of accommodation options in the surrounding areas, it is estimated that 55% of vehicles would be arriving from the north and 45% from the south.

Under normal traffic event management circumstances, there are a number of traffic management resources available to Parklands including nominated on-ground traffic management staff, camping marshals, paid police services, trained volunteers and tow trucks kept on site for mechanical difficulties.

(f) Event Requirements

Event usage of the site generally involves the following activities, subject to the size and nature of an event:

- Management of the event and event site;
- Assembly and dismantling of the temporary infrastructure for the event ('bump in' and 'bump out' periods) which will occur typically in the one to 21 days prior and one to 14 days following a major event, with less time taken for smaller events;
- Erection of temporary structures;
- Entertainment in performance tents and spaces;
- Temporary camping, ancillary to event usage, with associated infrastructure and services;
- Provision of facilities including stalls, food outlets, bars, toilet and shower facilities; and
- Monitoring of event compliance.

The objectives of the Event Space (used for limited periods each year) are to:

- Provide a safe, secure and healthy venue site for patrons, guests and workers;
- Provide temporary camping facilities to accommodate patrons and some staff so as to minimise traffic generation and off-site impacts;
- Monitor key factors before, during and after events and adopt and implement various recommendations, strategies, monitoring and mitigation measures proposed in any specialist assessments;

Table 3. Expected number of vehicles on site for each medium to large size event

Event Size	Category	Number of Vehicles	
		In Southern Car Park	In Northern Part of the Site
25,000 (single day)	Day Patrons	0	6,178
	Patrons Camping	0	0
	Statutory	0	80
	Workers w/laminates	0	416
	Workers w/wristbands	693	0
	TOTAL	**693**	**6,674**
25,000 (multi day)	Day Patrons	0	760
	Patrons Camping	0	7,376
	Statutory	0	80
	Workers w/laminates	500	0
	Workers w/wristbands	346	0
	TOTAL	**846**	**8,216**
35,000	Day Patrons	2,100	0
	Patrons Camping	0	7,376
	Statutory	0	80
	Workers w/laminates	0	500
	Workers w/wristbands		0
	TOTAL	**2,100**	**7,956**
	TOTAL	**2,100**	**8,122**
50,000	Day Patrons	2,100	0
	Patrons Camping	0	7,376
	Statutory	0	80
	Workers w/laminates	0	833
	Workers w/wristbands	0	0
	TOTAL	**2,100**	**8,289**

- Integrate environmental initiatives such as offsetting carbon emissions, waste avoidance and recycling and environmental education;
- Increase public transport services for patrons and workers to reduce numbers of vehicles onsite at any one time; and
- Plan event timetables to minimise traffic peaks and minimise any noise emissions.

(g) Infrastructure and Services

a) Permanent

The site is accessed from the Pacific Highway via Tweed Valley Way from the north and the south. Site access points are shown in Figure 3.

A main spine road has been built which connects Gate C (access from/to the southern carpark), Gate B, Gate A, and runs across the site up to Gate E, located in the north-western corner of the site (see Figure 3).The road has recently been sealed and line-marked from Gate C to the bus turnaround.

The site has multiple access/egress points. The main entry is from Gate C which leads into the southern car park and is where the spine road begins. There are also secondary access via Gate B and D along Tweed Valley Way, Gate A along Jones road (used for buses and artists) as well as various farm access points. In addition to this, there is a road connecting the northern part of the site with Wooyung Road (Gate E). This has been constructed entirely above the 100 year ARI event, has been sealed and is 7m wide. Campers travelling from the north can enter via this gate as well as service and emergency vehicles.

A road system has been constructed throughout the site providing a high level of access for emergency vehicles. Emergency services will be able to use any of the abovementioned gates but will also have available flood free access through Gate E, in the north- western corner of the area.

The spine road is above the 1 in 100 chance per year of flooding for its entire length. The Spine road is 7m wide and is formed and compacted generally with 400mm of gravel. Most traffic movement, including emergency evacuation, will make use of this road.

Event service roads are 6m in width and will also be formed and compacted generally with 400mm of gravel. These roads will primarily be used by service vehicles but are available for emergency use should the need arise.

Additional access roads on the site, referred to in this report as ‘event laneways’, are raised 100-200mm above existing ground level. The event laneways which primarily serve the camping areas will be usable up until the point of inundation.

A pedestrian walkway raised to the 1 in 100 chance per year flood level connects the event areas and the southern car park.

The following permanent water supply systems are in place:

For potable water:

- Two 23kl header tanks near the grey water treatment facility that gravity feed to: (a) a 250kl and 360kl bulk potable water tanks, and (b) two 23kl potable water tanks each at amenity ponds 1 to 8 (Figure 3);
- Additional 12 x 23kl potable water tanks located throughout the event area (as opposed to the camping or parking areas).
- Two 5kl potable water tanks at Pods 9 and 10.

For waste water (grey water):

- Four 230kl tanks (refer Figure 3)
- At amenity pods 1 to 8 there are two 23kl grey water tanks (pumped out by trucks).

b) Temporary

A number of services and infrastructure will be temporarily set up for specific events. This includes:

Auxiliary power for the site will be diesel generator driven. A number of large floodlight towers on movable diesel generator trailers (up to 50 towers for larger events) are used to light key areas. Lanterns that are strung up above the ground are used to light the internal walkways and access roads.

Typically for a large event there will be sufficient onsite food vendors, caterers and the Parklands General Store capable of providing meals to the

entire event population for a period of up to 3 days without the need for restocking.

In particular, event producers will directly control both the General Store (which sells a wide provision of dry foods, basic medical suppliers and camping equipment (i.e. batteries and torches, etc). Depending on the nature of the flood event, all or part of these food stocks could be utilised in case of an emergency.

For large events the site will have a full triage with medical staff and resources, including the services of a registered doctor to provide a GP style clinic with nurses and medics and two on- site ambulances. A medical services assessment identified that to ensure adequate medical care provisions for festivals, the appointed service must have the resources to provide care for up to 3% of the patrons over the period of the festival. This is more than adequate as Emergency Management Australia states that 0.5-1.5% of concert goers will present to the medical centre (Barnes, 2010).

Events held at Parklands will provide sufficient security personnel to manage all aspects of the event including perimeter and event entrance security, camping and car parking patrols, etc. Security will be supported by paid police personnel who will be present during all event days.

Security staff will be briefed and made aware of their roles and responsibilities in the unlikely event of an emergency such as a flood.

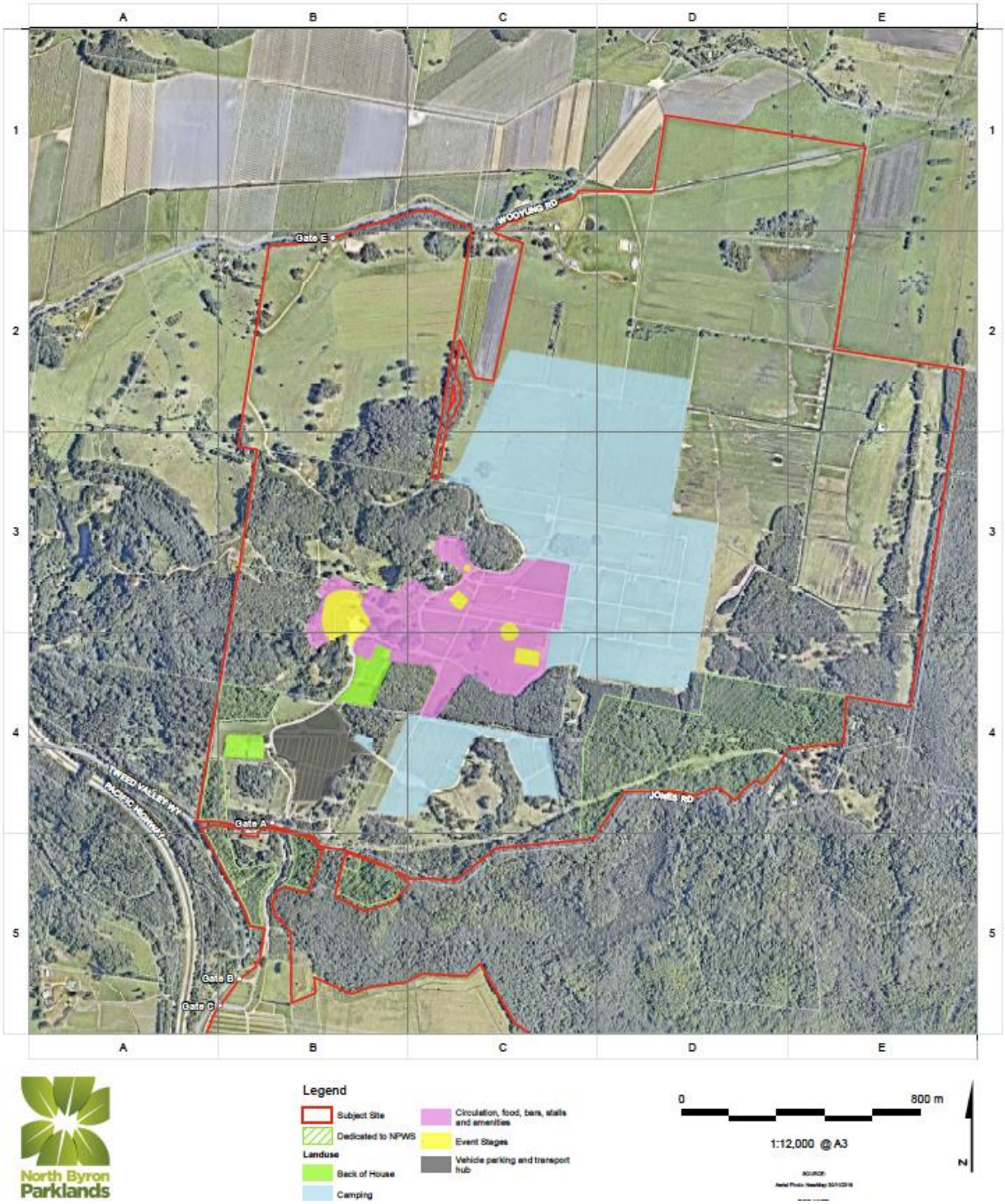

Figure 3. Overview of the site (Source: Planners North, 2020).

3. Flood risks

Flood Generating Weather

The seasonality of flooding in the region is the result of two distinct weather patterns; ex- tropical cyclones and intense depressions (east coast low pressure systems) close to the coast (SES, 2006).

In the early months of the year, tropical cyclones originating in the Coral Sea may move south and there have been occasions when the path of a cyclone has produced rains of duration and intensity to produce a flood in the northern river catchments (SES, 2006).

The most potent cause of flood rain events is the development of intense depressions close to the coast which usually form off either southern Queensland or northern NSW in a trough from the Coral Sea or from a shallow system. Depressions can develop at any time of year, but are most likely when sea surface temperatures are high and the air is humid. Therefore, most flood events in the Brunswick Valley catchment occur in the first half of the year with a peak period from February to April.

Rainfall patterns are also dependent on weather patterns that occur throughout the year. Flooding is more prevalent in a La Nina year when rainfall is significantly greater than the mean average rainfall. Thunderstorms, which generally occur during the summer, can also result in localised flooding which could impact specifically on the site.

Flood Probabilities

Table 4 shows the probabilities for various flood events occurring whilst an event is taking place or being set up. These probabilities are calculated by combining the flood annual probability of occurrence and the yearly frequency of a particular event. For the PMF event which can have a probability of anywhere between 1 in 10,000 and 1 in 10,000,000, the most conservative estimate (i.e. the most frequent) has been used. It should be noted that these probabilities ignore any seasonality in flooding.

Table 4 shows that the combined probability of people being affected by a flood on site exceeds the 1 in 100 AEP threshold only in the smaller flood events (the 1 in 5 AEP), and in all instances only during bump-in when a minimum amount of people would be on site and no one would be camping.

Design flood events for the local creek systems were modelled using the average rainfall intensities shown in Table 5 accordance with methodologies set out in Australian Rainfall and Runoff.

Flooding On The Site

The site is affected by both local catchment flow and flooding from the broader catchment. Local flooding will occur more quickly but will be shallower and of shorter duration while flooding from the broader catchments will take longer to arrive but may be deeper and remain on site for longer.

(h) North

To the north of Marshall's ridgeline, the site drains to the north and east towards the Crabbes Creek watercourse, which is itself a tributary of Mooball Creek, which flows towards the coastline in the east, and thence in a northerly direction and outlets to the ocean at Pottsville.

A number of man-made drainage swales have been excavated across the paddock areas to facilitate drainage. A farm dam with an approximate area of 1.8ha exists in the north- western part of the site.

Inundation due to floodwaters comes initially from overland flow along minor watercourses and open channels as a result of intense rainfall within the small catchment of the northern part of the site. Following this, or quite independently from such flooding, flooding from the Crabbes/Moobal Creek system will spread out across those floodplains and backup onto the site.

Table 4. Annual probabilities of patrons or staff on site being affected by flooding in different event types

Event type	Day type	Days per event	Total days per year	Flood Magnitude				
				1 in 5 year	1 in 20 year	1 in 50 year	1 in 100 year	PMF event (1 in 10,000)
50,000 patrons (1 per year)	Event	5	5	1/365	1/1,460	1/3,650	1/7,300	1/730,000
	Bump in	21	21	1/87	1/348	1/869	1/1,738	1/173,810
	Bump out	14	14	1/130	1/521	1/1,304	1/2,607	1/260,714
35,000 patrons (1 per year)	Event	5	5	1/365	1/1,460	1/3,650	1/7,300	1/730,000
	Bump in	21	21	1/87	1/348	1/869	1/1,738	1/173,810
	Bump out	14	14	1/130	1/521	1/1,304	1/2,607	1/260,714
25,000 patrons (single day)*	Event	1	3	1/608	1/2,433	1/6,083	1/12,167	1/1,216,667
	Bump in	7	21	1/87	1/348	1/869	1/1,738	1/173,810
	Bump out	4	12	1/152	1/608	1/1,521	1/3,042	1/304,167
5,000 patrons (5 per year)	Event	1	5	1/365	1/1,460	1/3,650	1/7,300	1/730,000
	Bump in	2	10	1/183	1/730	1/1,825	1/3,650	1/365,000
	Bump out	2	10	1/183	1/730	1/1,825	1/3,650	1/365,000
1,500 patrons (2 per year)	Event	1	2	1/913	1/3,650	1/9,125	1/18,250	1/1,825,000
	Bump in	1	2	1/913	1/3,650	1/9,125	1/18,250	1/1,825,000
	Bump out	1	2	1/913	1/3,650	1/9,125	1/18,250	1/1,825,000
Combined annual events	Event		20	**1/91**	**1/365**	**1/913**	**1/1,825**	**1/182,500**

* Three single-day 25,000 patron events have been used in this table instead of any of the multi-day options because these represent the worst case scenario, having a higher total number of bump-in and bump-out days per year

Table 5: Average Rainfall Intensities

Flood chance per year	Rainfall Duration (hrs)	Rainfall Intensity (mm/hr)	Total Rainfall (mm)
1 in 5	12	14.2	171
1 in 5	24	9.6	230
1 in 50	12	21.6	259
1 in 50	24	15.1	362
1 in 100	12	24.1	289
1 in 100	24	16.9	406
PMF	12	78.3	940
PMF	24	64.6	1,550

The backwater flooding takes longer to arrive at the site, as the flood storage downstream of the site would effectively have to "fill up" prior to the site being subject to major catchment flooding. Nevertheless flood risk in the northern part of the site is dominated by flooding within Crabbes Creek backing up onto the site.

(i) South

The southern part of the site is located on the floodplain for Billinudgel and Yelgun creeks and has different flooding characteristics than the northern site.

Flooding is dominated by water breaking out of these watercourses and entering the floodplain. The catchments of Billinudgel and Yelgun creeks upstream of the site are approximately 4.5km^2 and 0.5km^2, respectively. The response time of the southern catchment is significantly shorter than that of the Crabbes Creek catchment to the north.

The southern part of the site is also affected by flow entering via culverts under the Pacific Highway and Tweed Valley Way. This causes water to back up and travel northward in an existing cane drain, which runs parallel to Tweed Valley Way.

Flood Hazards

The original North Byron Parklands FIA was based on the hydraulic model developed as part of the Tweed-Byron Coastal Creeks Flood Study (BMT WBM, 2010). This model has been reviewed as part of the ongoing Tweed Coastal Creeks Flood Risk Management Study, and was not found to require any further modifications (personal communication, BMT WBM, July 2015). Therefore, the hydraulic model remains valid for this assessment.

(j) Hydraulic Hazards

There are a number of factors which are used to categorise flood hazard. These include the depth of the floodwater and the velocity. The rate of rise of the floodwater is another contributor to flood hazard.

The preliminary hydraulic hazard on the site has been categorised by the following scale shown in Figure 4 (Worley Parsons, 2011).

There are different threshold characteristics that define the hazard categories:

- Low – people are able to walk through water comfortably and vehicles can drive through
- Medium – vehicles start to float away but adults can walk through water with a little difficulty
- High – water becomes hazardous to walk through
- Very High – damage to buildings can occur
- Extreme – damage to buildings is likely

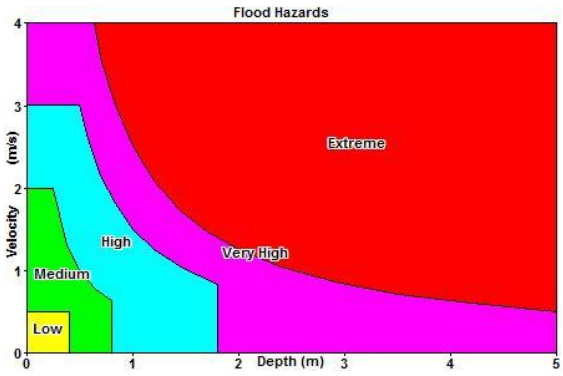

Figure 4. Hazard Categories

(k) Preliminary Hazard Categories

The peak hydraulic hazard has been modelled for the 1 in 5, 1 in 50, 1 in 100 chance per year and PMF events and is shown in Figure 5 to Figure 8.

There is considerable land which is flood free on site even in a PMF.

In a 1 in 5 chance per year flood, the majority of the event areas and car parking are categorised as low hazard, with some areas of high hazard throughout the north east corner of the event area.

The 1 in 50 and 1 in100 are relatively similar to each other with the majority of the application area categorised as being of high hazard, with some of the western event areas and southern car park being a medium flood hazard.

In a PMF the majority of the flooded areas have very high flood hazard although much of the site is flood free.

(l) Flood Depths

Within Parklands, the majority of the site is relatively flat. Flooding is caused by water flowing across the floodplain and pooling. Therefore the velocity of the floodwater is very low and so the relatively high hazard ratings are caused by the flood depths which are depicted in Figure 9 to Figure 12.

a) 1 in 5 chance per year

The majority of the northern camping and event areas are between 0.1 and 0.9m deep, with the deeper areas being found in the north east parts of the area. Generally it would be safe, though not desirable, for people to be able to safely walk over most of this site were it to flood to these depths. Cars would float if they remained in many parts of this site.

The southern car park experiences a maximum depth of approximately 0.6m along its northern and southern edges. The majority of the car park area experiences depths of less than 0.4m with some parts to the east of the car park and to the west of the pedestrian walkway remaining flood free. Cars in more than about 0.3m of water could begin to float.

b) 1 in 50 chance per year

On the northern part of the site, floodwaters will reach of maximum of 1.5m deep, with the majority of the area experiencing flooding around 1m deep. This would be unsafe for cars or pedestrians

In the southern part of the site, the northern boundary of the car park will experience the greatest depths at 0.9m, while the rest of the car park is subject to depths between 0.4 - 0.7m. Any cars left in these areas would float although it may be safe, though not desirable, for people to walk in these areas. Parts of the car park area to the west of the pedestrian walkway remain flood-free.

c) 1 in 100 chance per year

On the northern part of the site, floodwater will reach a maximum depth of approximately 1.5m in the central parts of the event and camping areas.

In the southern part of the site, the majority of the car park area will have floodwaters approximately 1m deep with one or two very small locations showing points up to 1.5m.

Most of the flooded parts of the site would be unsafe for vehicles or pedestrians.

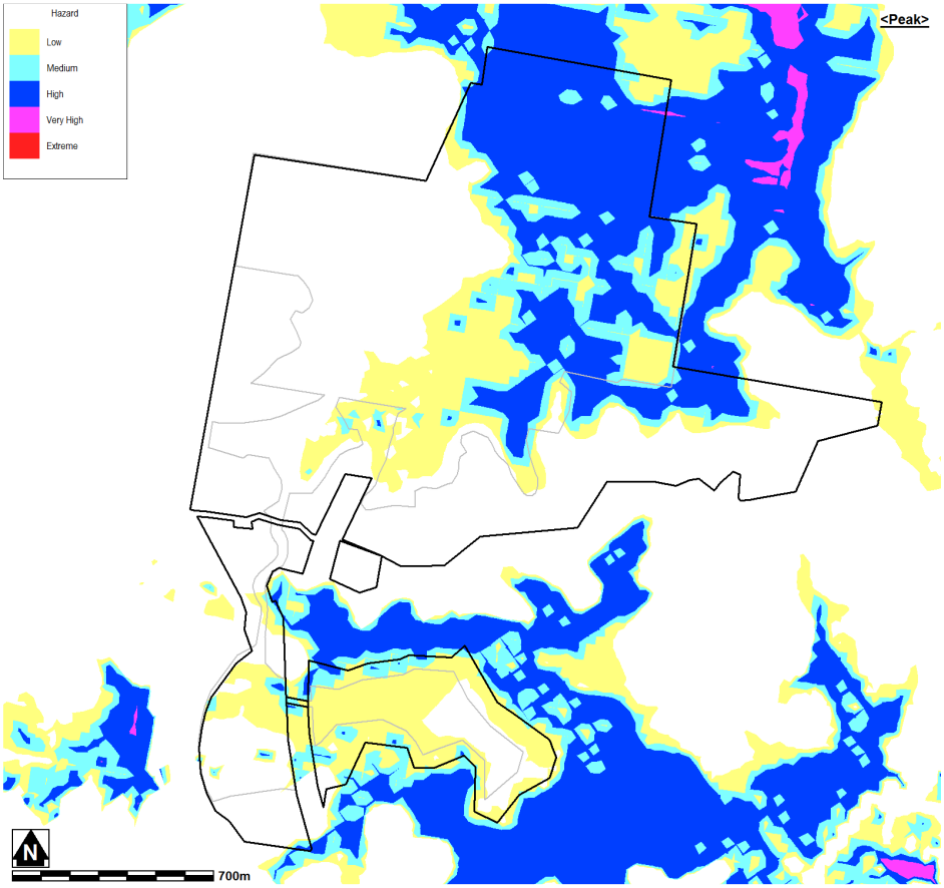

Figure 5. Peak flood hazard in 5yr flood event

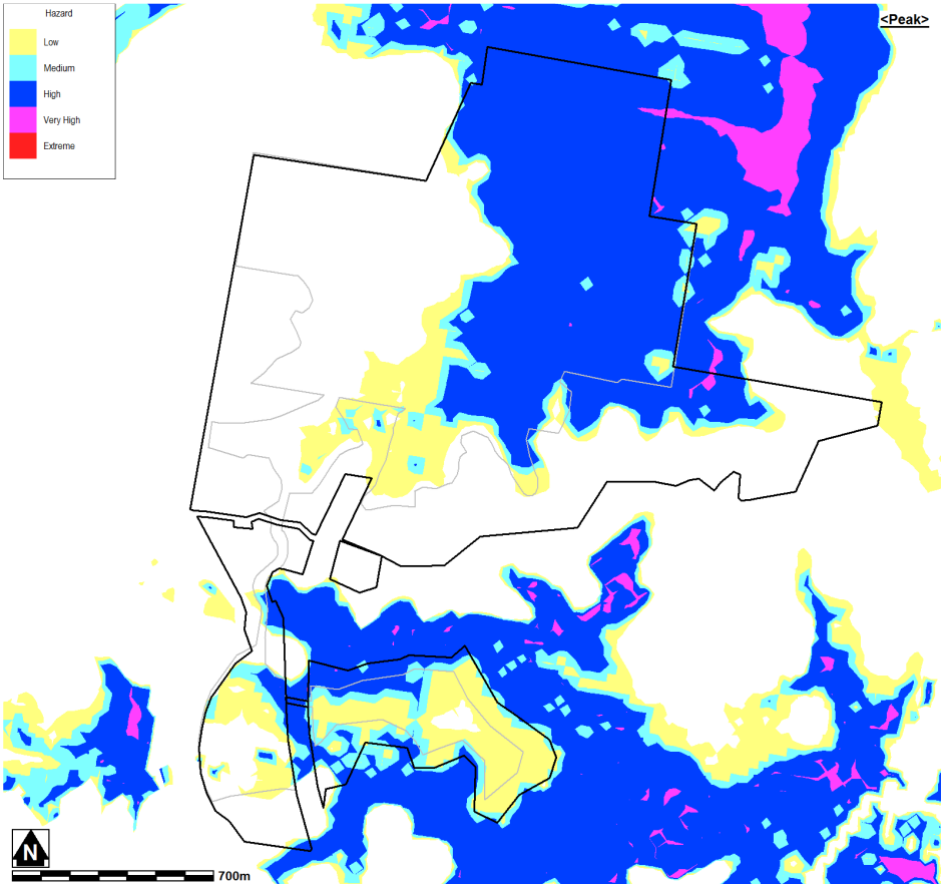

Figure 6. Peak flood hazard in 50yr flood event

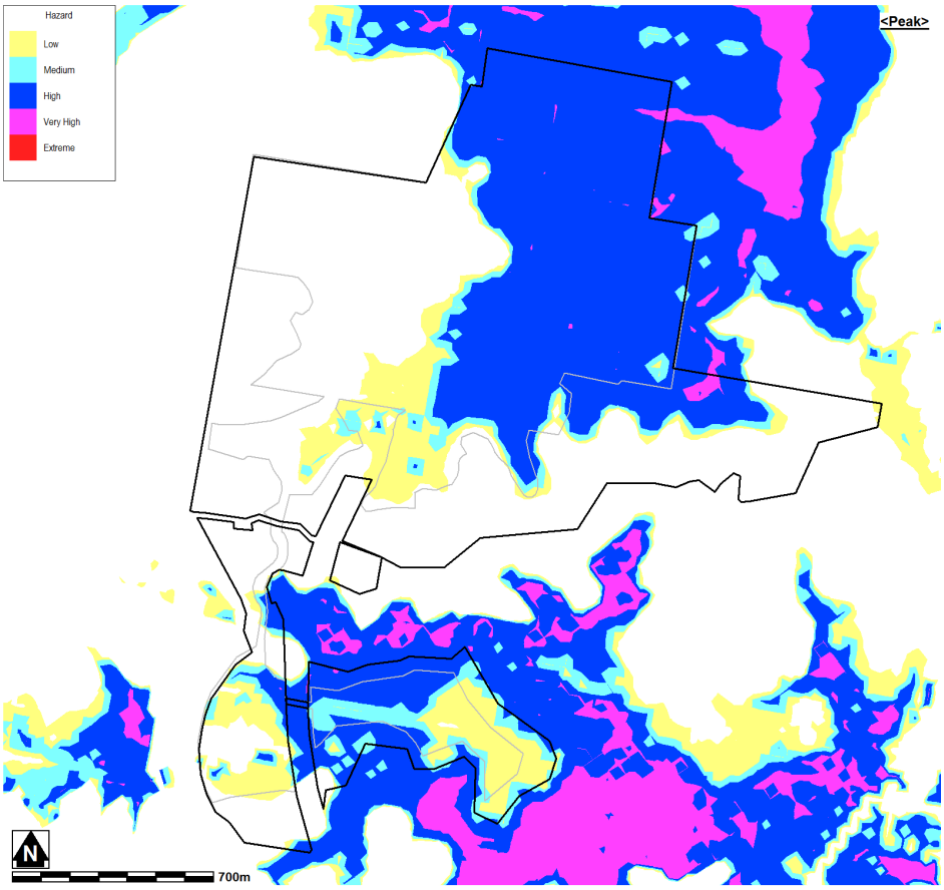

Figure 7. Peak flood hazard in 100yr flood event

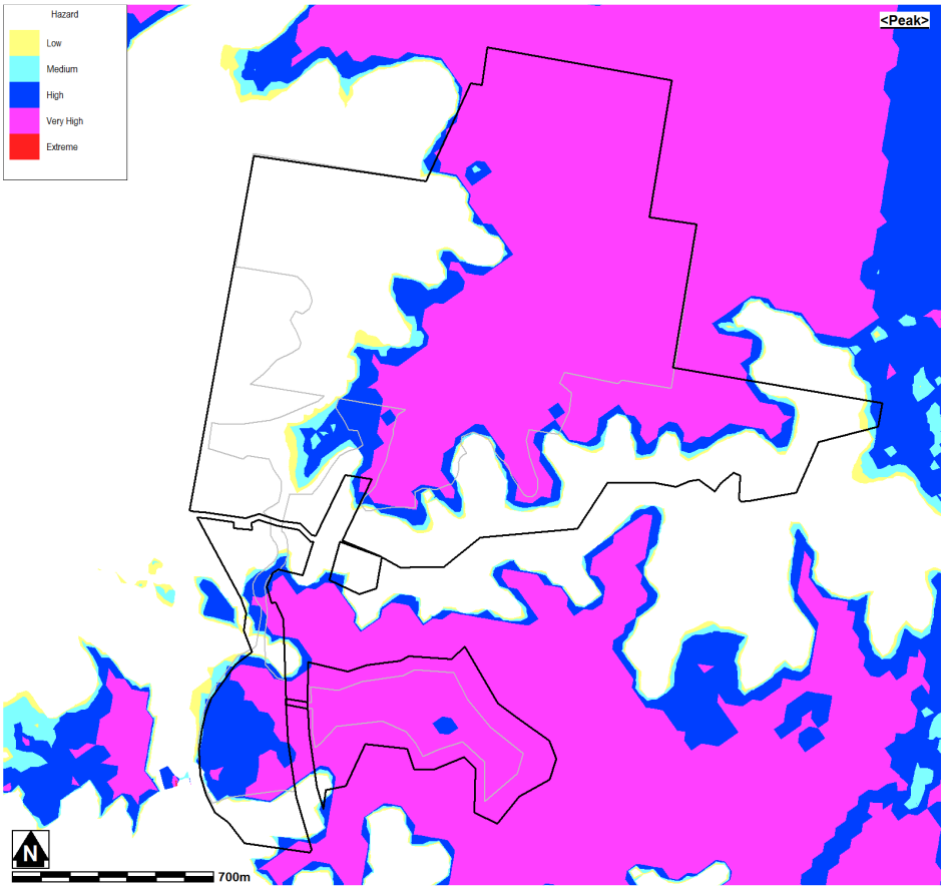

Figure 8. Peak flood hazard in PMF flood event

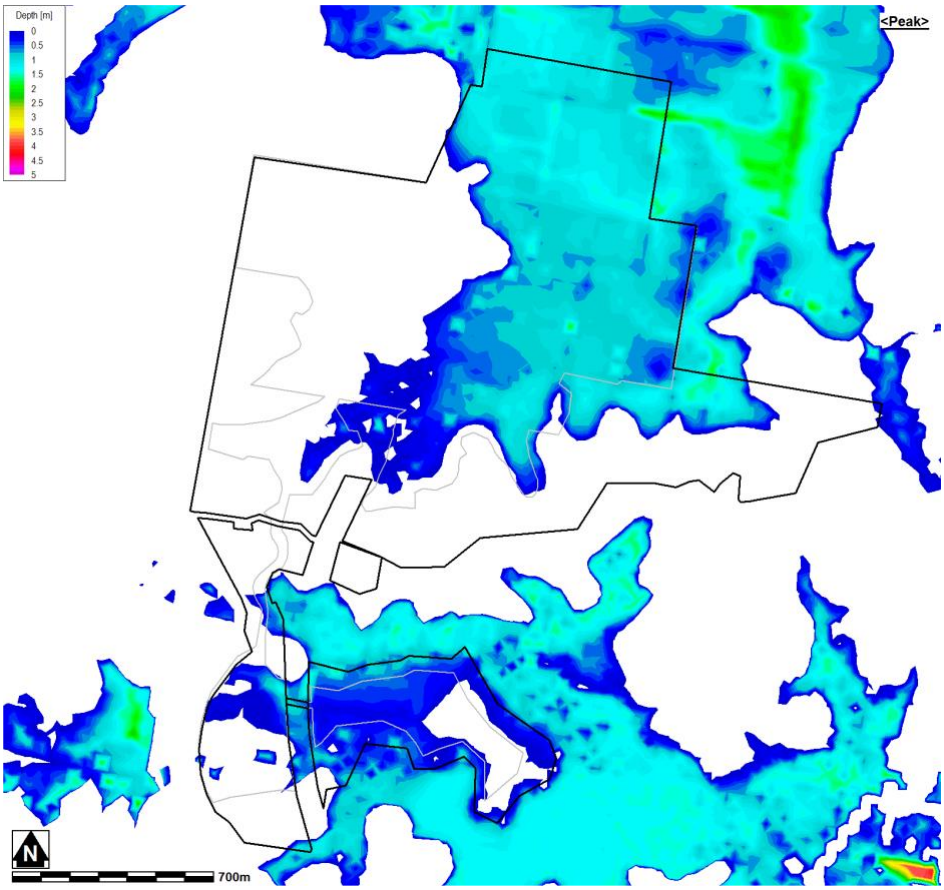

Figure 9. Peak flood depth in 5yr flood event

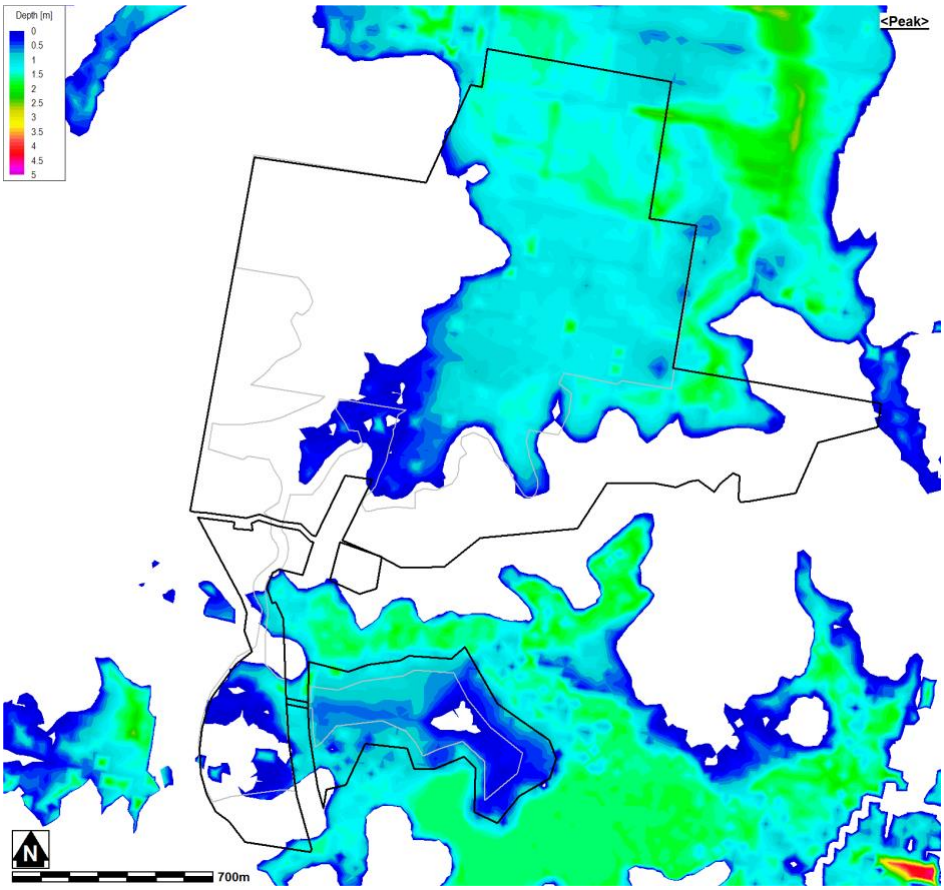

Figure 10. Peak flood depth in 50yr flood event

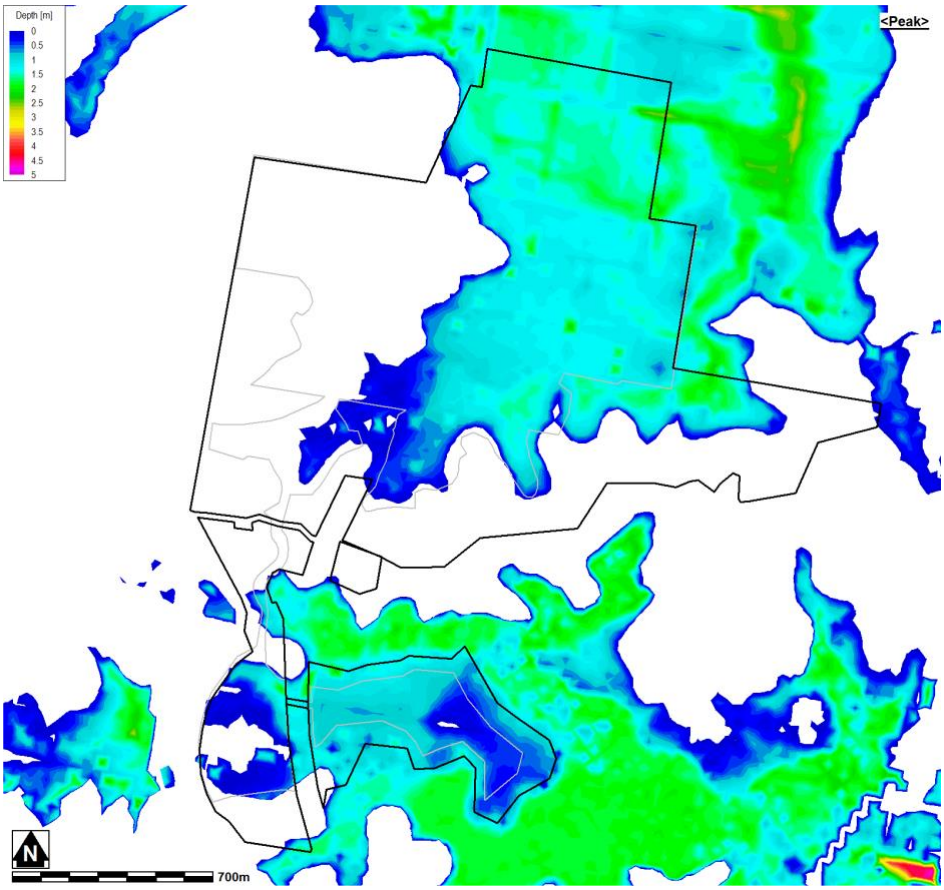

Figure 11. Peak flood depth in 100yr flood event

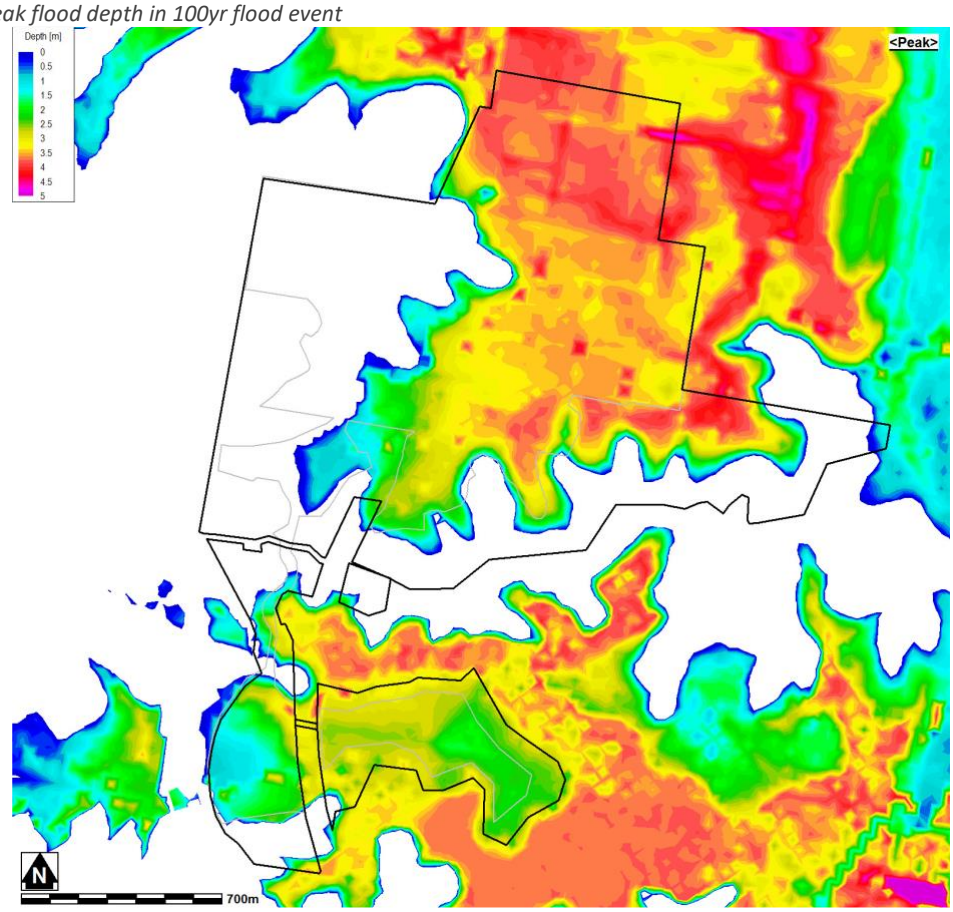

Figure 12. Peak flood depth in PMF event

d) PMF

On the northern part of the site, the depth of floodwater ranges from a maximum of approximately 4m across the north-east camping areas to 0.5m in the south-west parts of the event area.

In the southern part of the site, around the southern car park, flood depths range from 0.8-2.8m deep. The area to be used for the pedestrian walkway experienced flood depths of up to 3.5m deep (however, this walkway has been raised up to withstand the 1:100 flood so while some flooding may occur across its surface, it will not reach the depths described here).

(m) Rates of Rise

The rate at which floodwaters rise also contributes to the overall flood hazard.

Figure 13 to Figure 16 are design hydrographs (flood level versus time) for locations in the centre of the event area and in the southern carpark for a 1 in 5 chance per year flood and a PMF. These are indicative of the range of rates of rise which can occur in the different parts of the site for different sized floods.

It should be stressed that these are design hydrographs which correspond to a theoretical rainfall event and a real event may have a different rate of rise depending on the distribution of rainfall over time and space. Nevertheless, they are instructive and while smaller events may rise quicker than the design hydrographs suggest, none are likely to rise more quickly than the 12 hour PMF illustrated here.

It should be noted that in all floods the site is likely to remain flooded for more than 24 hours.

a) The Event Area

Figure 13 shows that in the 1 in 5 year ARI event, the middle of the camping area, flood causing rain starts a couple of hours before there is any noticeable water over the ground but within another two hours it could be about 0.3m deep and remain so for several more hours. This would be as a result of the initial rainfall being absorbed by the ground and early runoff taking some time to accumulate as it flows through the small catchment upstream of the event area. This water, having reached the flat ground of the event area will take some time to drain away. During this time flood depths would be such that it would possible to walk and drive around this part of the site.

About 10 hours into the event water from Crabbes Creek begins to arrive and add to the water which is already covering the site. Within an hour from then the water would be too deep to drive through but even in the peak of the flood several hours later it would be possible, though not desirable, to walk through this part of the site.

These thresholds will be exceeded sooner in the north eastern part of the site and later in the south western part of the event area.

In a PMF (Figure 16) the hazard thresholds would be exceeded much more quickly. After about one hour the ground would begin to flood and it would take only another hour before the water was too deep to drive through. Within 4 hours of this the water would be too dangerous to walk through as water began arriving from Crabbes Creek. After this the water would rise a couple of metres in as many hours.

b) Southern Parking Area

Figure 14 shows a hydrograph for the southern parking area. Assuming that the road crossing the low point on the access to the eastern part of the South Park is filled to the level of the western section of the car park, a 1 in 5 chance per year flood would take nearly 6 hours to reach a level where it was flooding the carpark. Even at the peak of the flood a couple of hours later it would still be possible to drive through the water.

In a PMF it would take about 3 hours for the site to begin flooding but in less than half an hour the water would be too deep to drive through in much of the car park and within an hour would be too dangerous to be walking through.

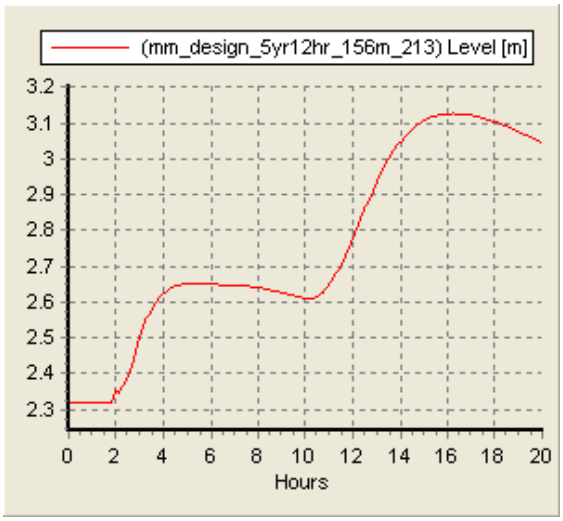

Figure 13. 5yr flood event hydrograph – camping area (2.3m terrain)

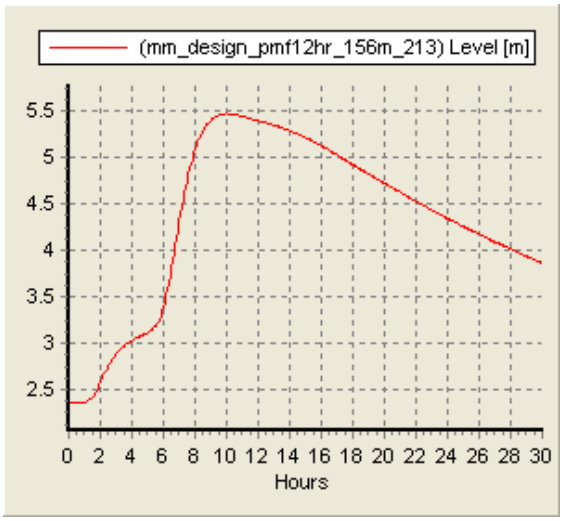

Figure 15. PMF flood event hydrograph – camping area (2.3m terrain)

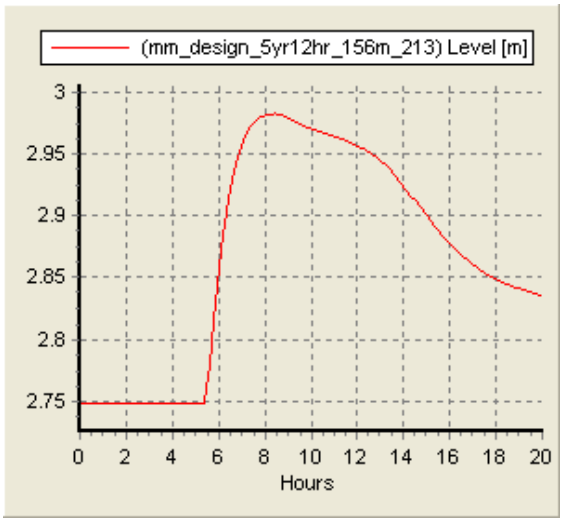

Figure 14. 5yr flood event hydrograph – carpark area (2.9m terrain)

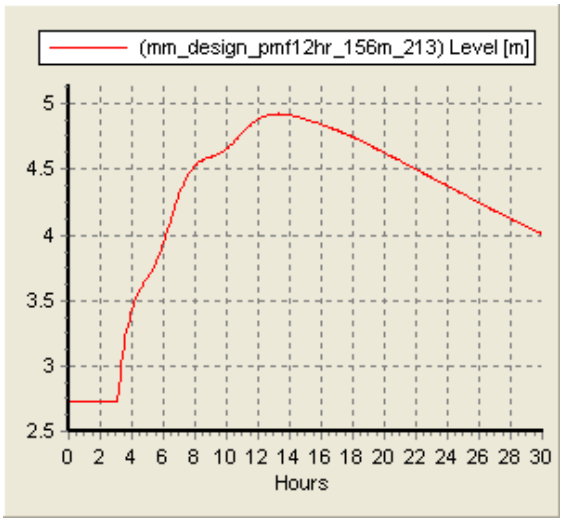

Figure 16. PMF flood event hydrograph – carpark area (2.9m terrain)

Time Needed to Evacuate

(n) Vehicular Evacuation

According to the Australian Standard AS 2890.1-1993 – Parking Facilities – Off Street Parking, the design rate for vehicles exiting parking facilities onto a public road is 600 vehicles per hour per lane. This also is the rate that the NSW SES recommends for estimating the flow rate of vehicles along evacuation routes during a flood (Opper, 2004).

Tweed Valley Way is a two lane road which connects to the Pacific Highway North and South of the site. This provides the site with a single evacuation lane heading north and a single evacuation lane heading south. It also means that there is a lane available from each direction for use by emergency service vehicles.

The northern access road connecting the northern part of the site to Wooyung Road is above the 100 year ARI level, and provides an additional evacuation route east to the Tweed Coast Road, if this is not cut by flooding (see Section 3.6.7). Evacuation along the Tweed Coast Road would provide a further reduction in evacuation times because it would effectively provide three evacuation lanes out of the site.

This section provides an estimate of the vehicular evacuation time for the worst case scenario, that is the two larger events organised each year: Splendour In The Grass (i.e. up tp 50,000 patrons) and Falls Festival Byron (FFB) (i.e. 35,000 patrons).

a) 35,000 Patron Events

As set out in Table 3, in a 35,000 patron event there will be up to 10,056 cars. Of these, up to 7,956 would be parked in the north-east camping areas and the northern car park and 2,100 in the southern car park.

The 7,956 vehicles from the camping areas and northern car park will be initially directed onto Jones Road and then north along Tweed Valley Way or via the new dedicated egress (that will be built to be flood-free up to the 100 year ARI) to Wooyong Road, and from there north along Tweed Valley Way. Those in the southern carpark will be directed south along Tweed Valley Way.

Once the southern car park has fully evacuated (i.e. this will take 3.5 hours), about half of the remaining vehicles in the camping areas and northern car park will be sent south from Jones Road to Tweed Valley Way. It is estimated that these vehicles will take just less than five more hours to evacuate, resulting in a total site evacuation time of 8.5 hours.

If the Tweed Coast Road evacuation route were also able to be used, the total site evacuation time would be further reduced to about 5.5 hours.

b) 50,000 Patron Events

In a 50,000 patron event, there would be up to 10,389 vehicles on site, of which 8,289 would be parked either in the camping areas in the north-east part of the site or the northern carpark, while the southern car park would accommodate 2,100cars.

The 8,289 vehicles from the camping areas and northern car park will be initially directed onto Jones Road and then north along Tweed Valley Way or via the new dedicated egress (that will be built to be flood-free up to the 100 year ARI) to Wooyong Road, and from there north along Tweed Valley Way. Those in the southern carpark will be directed south along Tweed Valley Way.

Once the southern car park has fully evacuated (i.e. this will take 3.5 hours), about half of the remaining vehicles in the camping areas and northern car park will be sent south from Jones Road to Tweed Valley Way. It is estimated that these vehicles will take about 5.16 hours to evacuate, resulting in a total site evacuation time of 8.65 hours (about 8 hours and 40 minutes).

If the Tweed Coast Road evacuation route were also able to be used, the total site evacuation time would be further reduced to about 7 hours.

c) Decision Making and Delays

The NSW SES, in its evacuation modelling (Opper 2004), allows a further 2-3 hours for traffic delays caused by vehicles breakdowns, accidents, trees across roads or water over roads (see Section 3.6.7) for this duration of evacuation traffic.

In addition to these travel times and potential delays, there would be time taken for management to decide to call an evacuation, time to organise staff for an evacuation, time to disseminate the evacuation order to patrons, time for patrons to pack and time for patrons to reach their vehicles.

Those who are camping could need at least an hour to pack and those who have to walk the two kilometres to their cars at the southern car park could take between 30 minutes and an hour. Dissemination of the evacuation order could be done quickly through the public address system and the event mobile phone application but people are likely to need time to get verification from camp marshals and security staff and comprehend what they need to do. The time taken for decision making and staff briefings will depend on the decision making system and training that is in place.

Therefore the evacuation times previously calculated should be increased by about 4 hours to obtain the total time from when the evacuation decision is made to when the last vehicles leave the site. The total estimated vehicular evacuation times for each event are summarised in Table 6

Comparing these times with those in Section 3.4.4, and the potential flooding of external roads as outlined in Section 3.6.7, it is clear that evacuation would need to commence well before a flood causing rainfall event began if it is expected to get all vehicles and patrons off the site ahead of floodwaters becoming hazardous. It is also clear from Section 0 that the chance that it will be necessary to do so for any event is very small.

Nevertheless, it must be planned for and this Flood Evacuation Plan includes a decision support framework that assists in making early evacuation or event cancellation decisions and efficient site evacuation to reduce the chance of patrons being trapped on site by flooding.

Table 6. Total vehicular evacuation time for the 35,000 and 50,000 patron events

Event Size	**Evacuation time**	
	All vehicles are equally split in two evacuation lanes	**All vehicles are equally split in three evacuation lanes**
35,000 patrons	12.5 hours	10.5 hours
50,000 patrons	12 hours and 40 minutes	11 hours

(o) Pedestrian Evacuation

In the very unlikely case that vehicular evacuation is not possible before the access roads are cut by floodwaters, patrons on site would be asked to walk to the Flood Emergency Assembly Area.

The rates of rise shown in **Error! Reference source not found.**13 to **Error! Reference source not found.** 16 make it clear that pedestrian evacuation from flood affected areas to high ground is easily achievable.

The furthest anyone would have to walk from a flooded event area to the flood emergency assembly point is about 800 to 900m. Even at a very slow walking pace of 2kph (which could occur with large crowds), it would take no more than 25 minutes to reach flood free ground.

In an event rising as quickly as a PMF floodwaters would not become hazardous on the site within one hour of water beginning to flood the ground. Therefore, the physical cue of the event area

beginning to flood would provide sufficient warning time for people to safely evacuate on foot.

The nominated Emergency Assembly Area for flood related emergencies is the Amphitheatre, at the western end of the event area (Figure 19). The Amphitheatre is located in a flood- free zone, has toilet facilities, water supply, and can host up to 22,000 people. Additional evacuees would be able to take refugee on the neighbouring flood-free high-grounds north and west of the Amphitheatre. It is estimated that this area could host all patrons and other people on site in a large event (i.e. up to 50,000 patrons). The Amphitheatre can be reached using the spine road, which is built above the 1 in 100 flood level and would be entirely flood free in the first phases of the flood.

(p) Conference Centre

The proposed conference centre and associated accommodations are above the PMF level. In case of flooding, access to and from the site would be possible in any flood event via the Spine Road south to Tweed Valley Way. Any activity within the Centre would be able continue normally. However staff and patrons would need to be reminded not to walk or drive through floodwaters during or after the event.

Other Risk Factors

In addition to the risks normally associated with flooding, the nature of this event introduces some other risks which need to be taken into consideration in the management of flood response. These additional risks have been taken into consideration when developing the management actions and have been cross referenced with the actions that will help ameliorate their risk.

(q) Intoxication of Patrons

If a flood were to occur during an event, problems would exist with the number of people capable of safely driving their vehicle due to alcohol and potentially, recreational drug consumption. This will be especially relevant for those camping with their vehicles. The condition of participants may also affect their ability and/or willingness to follow directions issued by authorities.

Addressed: Sections (nn), (vv), (eee), (fff), (lll), (ppp), (yyy), (cccc), (dddd), (llll), (mmmm), (pppp), (qqqq).

(r) Night time Flooding

Floods can occur at any time of the day or night. If a flood happened during the night, additional risks will be present including trying to communicate with people who may be asleep and a lack of lighting for response actions to be undertaken.

Addressed: Sections 0, (mmm), (mmmm).

(s) Resources for those on Site

There are two additional risks regarding resources onsite. Firstly, if people remain onsite in flood free areas, there needs to be enough water, power and toilet facilities for the number that remain and secondly, these facilities and resources need to be located in areas that are not affected by the flooding and do not require people to cross flooded areas to reach them. There needs to be sufficient resources to cater for people remaining on site for at least 24 hours.

Addressed: Sections 0, (ii), (rr), (aaa), (mmm), (uuu), (mmmm), (qqqq).

(t) Patrons wanting to protect their assets

Some patrons might want to take unnecessary risks or ignore directions from staff to protect their vehicle and camping gear from flood damage.

Security will be strictly managing the site to ensure all patrons follow commands. NSW Police will also be assisting with this.

Addressed: Sections 0, (ii), (rr), (aaa), (mmm), (uuu).

(u) Risk of Electrocution

With a range of temporary onsite power generators located across parts of the site there is a risk that if such infrastructure becomes inundated there arises the potential for electrocution.

Addressed: Sections 0, (mmm).

(v) Medical Emergencies

Not only will patrons on site need to have a supply of medical resources on hand, but in the event of a life-threatening emergency, emergency response personnel will need to be able to reach affected

patrons. This may be complicated if external and internal roads are closed due to flooding and ambulances need to transport a patient off-site.

Addressed: Sections 0, (mmm), (mmmm), (qqqq).

(w) External Road Flooding

If flooding is occurring on site, it may not be enough to evacuate all people from the site, as external roads to the north and south of the parklands may also be cut by flooding. Patrons would then be forced to queue on external roads and wait for flood waters to subside. This could impact on the number of cars that are able to leave the site or place cars in the path of rising floodwaters.

Addressed: Sections 0, (eeee).

Figure 17 shows the local road network and the low points on each road. A star indicates that the road would be cut by the 1 in 100 flood.

Forecasts and Warnings

(x) BOM Forecasts

Monitoring the weather forecasts and warnings will be an integral step in managing the flood risk of the North Byron Parklands site. This will be critical being able to evacuate the site before flooding commences.

The Bureau of Meteorology (BoM) has forecast rainfall maps which can be used to estimate the amount of rain expected to fall over the next eight and four days, as well as the next 24 hours. This information is available at: www.bom.gov.au/jsp/watl/rainfall/pme.jsp

NSW Weather Warnings are issued by the Bureau of Meteorology and can be found at the following link: www.bom.gov.au/nsw/warnings/

Key warnings which operators and managers will need to look out for include Severe Weather Warnings for the Far North Coast, Flash Flood Warnings for the Far North Coast and Flood Watches/Warnings for the Brunswick River, Mooball Creek, Bilinudgel Creek or Marshals Creek.

To ensure that these warnings are noticed in a timely manner, the Venue Manager and the Event Producer and their nominated staff will have their mobile phone numbers added to the SES contact list for the issuing of SMS alerts for flood watches, flood warnings and evacuation orders.

The Bureau of Meteorology also has rainfall and river gauges which show the amount of rainfall that has fallen in the previous 24 hour period and stream gauges which indicate water heights. These can be monitored at: www.bom.gov.au/australia/flood/

There are several gauges in the region that could assist with flood prediction and warning. These include the gauges located at Burringbar Reservoir (rainfall) and Lacks Creek/Middle Pocket (river and rainfall). The data on the website is updated every hour or so.

The radar service on the BoM website also shows current rainfall location and intensities. The radar station to be used for the site would be the Brisbane radar at: www.bom.gov.au/products/IDR663.loop.shtml#skip

(y) North Byron Parklands Gauges

a) Location

North Byron Parklands has installed three rain gauges and two stream gauges in the local area to improve monitoring of rainfall and creek conditions in real time. There is a rain gauge in the Upper Crabbes Creek catchment and a combined rain gauge and stream gauge on a drainage channel at the northern site boundary which drains to Crabbes Creek. There is also a combined rain gauge and stream gauge on Yelgun Creek at the culvert under the Tweed Valley Way on the western site boundary.

The location of the combined rain gauge and stream gauges is shown in Figure 18.

The gauges are maintained by the Manly Hydraulics Laboratory and are linked by telemetry into the BoM gauging network system. North Byron Parklands has a dedicated web interface with these gauges. This interface also has links to other BoM webpages which provides other forecasting and monitoring data which is useful for flood emergency management at North Byron Parklands.

Figure 17. External Road Low Points

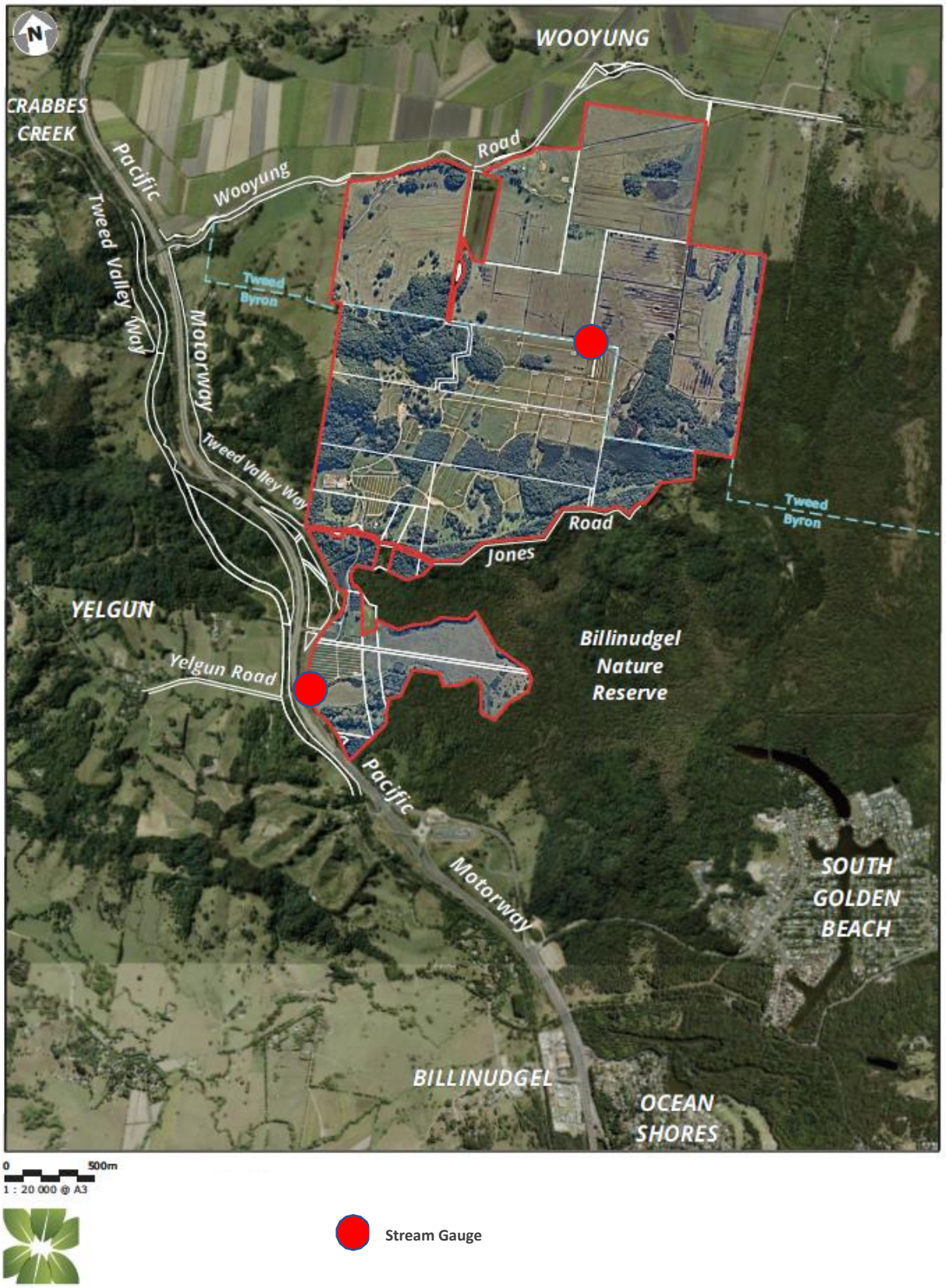

Figure 18. North Byron Parklands Stream Gauge Location
(Source: Planners North, 2020)

b) Calibration

Before the gauges were installed there was a significant rainfall event between 25th and 28th January 2013 with most of the rain falling on 27th and 28th January. The Cudgera rain gauge 10km north of the site recorded a total of 283mm of rain over that period. The Myocum rain gauge 15km south of the site recorded 220mm over the same period. It would be reasonable to assume that the site received a similar amount of rain over this time.

An inspection of the site on 29th January indicated that the northern end of the camping ground section of the site experienced flood depths of around 0.4-0.6m.

Table 5 suggests that 230mm of rain over 24 hours has about a 1 in 5 chance of occurrence per year. This would result in up to a 0.8m depth at the northern end of the camping ground but generally around 0.5m. This is consistent with the regional rainfall measurements and the site flood observations in the late January event.

The gauges were installed in Late April 2013 and have been adjusted to have gauge zero correspond to 0m Australian Height Datum (AHD). There was a significant rainfall event in the area between 27th June and 3rd July with rainfall totals of 186mm at Upper Crabbes Creek, 176.5mm at the northern drain and 185mm at Yelgun Creek. Peak rainfall occurred in the 24 hours to 9am on 2nd July with rainfall recordings of 86mm, 73mm and 74mm at the three gauges respectively.

The Northern Drain gauge peaked at 1.4m AHD just after midnight on 2nd July. The Yelgun Creek gauge peaked at just below 1.4m AHD a few hours later. There was not flooding of any part of the site over that period.

According to the digital terrain model of the area, the site begins to flood from back water flooding from Crabbes Creek when water reaches about 2.3m AHD. So, in the absence of a calibration flood, it would be reasonable to assume that the northern part of the site will begin flooding when the gauge reading reaches about 2.3m AHD.

The digital terrain model suggests that the ground level at the carpark adjacent to Yelgun Creek ranges from about 4.5m AHD at its western end to about 2.9m AHD at its eastern extremity. The gauges is at the western end of the carpark and there may be a slope on the water surface during a flood so a gauge reading will only provide an accurate level relative to the western end of the car park. Several calibration events will be needed for this gauge to maximise its usefulness in estimating what gauge readings mean in terms of depth of inundation in the eastern parts of the carpark.

The other part of the equation is working out what rainfall triggers critical levels at either gauge and this will also become more reliable as more calibration events are recorded. In the meantime the rainfalls listed in Table 5 give the best indication as to what rainfall totals are likely to impact the site.

Once the gauges are reasonably well calibrated, the BoM can set alert levels based on rainfall intensity, total rainfall and/or gauge height which will send an automated alert message to BoM and SES.

It should also be noted that there is about a 30 minute delay between the data being collected and it appearing on the BoM Enviromon interface.

c) Maintenance

Ongoing maintenance of these gauges is essential for them to be reliable tools for flood emergency management. Even with a proper maintenance regime in place it is still possible that they will incorrectly log data or fail to transmit data during a real event. Manual reading of the stream gauges is possible but under no circumstances should personnel enter floodwaters to do so.

(z) Local Road Conditions

The NSW Northern Rivers Regional Organisation of Councils (NOROC), which includes Byron Shire, has a web based tool called RoadInfo that allows consistent regional road information during floods to be published online. The website includes a map of the Northern Rivers Region with markers on roads that are closed, those that motorists should exercise caution on, those undergoing road works and those which have been re-opened.

However, it is important to remember that the information on RoadInfo is based on the information collected at discrete points in time; it is not a representation of the real-time status of roads. It is not intended to be a full and accurate representation of road conditions. Road conditions can change at any time, so motorists need to be

aware that information listed on this site may be inaccurate, incomplete or out of date.

Flood watches and warnings from the Bureau of Meteorology are also provided on the RoadInfo site. Users can also search their current location on a map and be provided with safe driving directions to their destination. To access this information go to: www.myroadinfo.com.au

4. Philosophy and Responsibilities

Emergency Response Philosophy

(aa) Priorities

This Flood Risk Management Plan recognises that protection of life is of critical and primary importance.

The Plan also recognises the need for protecting the assets of patrons, artists and suppliers but this must be secondary to protection of life and limb.

While the Plan recognises the need for event organisers to meet their financial goals, this will not be consciously done to the detriment of protecting life or property. It is incumbent on event organisers to take all necessary measures outside of this Plan to manage the financial risks which flooding poses to their event, organisation and brand.

(bb) Alert Levels

To assist in managing flood risks and communicating response actions, seven flood alert levels have been developed for use in this plan. They have been colour coded to further assist in communication. They are

Normal - White – daily monitoring of weather forecasts and warnings

Flood Watch – Blue - Flooding might be a possibility – more frequent weather and warning monitoring and preparatory actions.

Flood Warning – Yellow – Flooding is expected to occur – Continuous weather and warning monitoring and get ready to evacuate.

Evacuation – Orange – All patrons, artists, suppliers and staff to leave the site by vehicle. Continuous weather and warning monitoring.

Take Refuge – Red –Flooding is an immediate threat to patrons and they must take refuge on flood free land. Continuous weather and warning monitoring.

Cancel – Black – imminent flood threat or actual flooding makes it unrealistic for the event to be held or to continue.

All Clear – White – Flooding has ceased. The event may continue or may be stopped depending on the circumstances.

These may be revised up or down depending on the changing forecasts and actual conditions. Once a decision is made to cancel an event this cannot be revised.

Alert Matrices

Alert Matrices have been developed which nominate thresholds that trigger escalation of alert levels at different times during an event's life.

It is recommended that the Alert Matrices play a key role in the planning and training processes before a flood occurs, as well as when flooding is possible and when it does happen. It will be important to maintain the Matrices and update it if new information is made available and review it after events which trigger any level of flood response.

The Alert Matrices are shown in Table 7 and will be used to define the upper trigger points for undertaking actions when flooding is occurring or could possibly occur. Note that the thresholds and triggers differ depending on what stage the event has reached and there is a different matrix for each stage.

It should be stressed that these are upper bound trigger points and the Alert Level MUST be escalated if any one of these thresholds alone is reached or exceeded because there is a high degree of certainty that the corresponding management actions will be necessary. The Venue Manager or the Event Producer can choose to escalate the Alert Level before these thresholds are reached. Also, a combination of some thresholds may trigger escalation of the Alert Level and applicable combinations are also shown in the matrices.

Table 7. Flood Alert Matrices

Forecast/Observation	**Individual alert thresholds During Bump In**				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
8 day total rainfall forecast	>300mm	NA	NA	NA	NA
4 day total rainfall forecast	>150mm	NA	NA	NA	NA
24 hour total rainfall forecast	>50mm	>150mm	>250mm	NA	NA
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Directive from SES	Directive from SES	Directive from SES	NA
Radar	Moderate or heavy after >50mm in 24hrs	NA	NA	NA	NA
Fallen rain in 24 hours	>50mm plus more forecast	>100mm plus more forecast or >150mm fallen	>150mm plus more forecast or >200mm fallen	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	NA
Water on site	NA	More than 100mm depth in areas being used	More than 100mm depth in areas being used	Within 200mm of lower parts of spine road.	NA
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes cut and Orange Alert threshold reached	NA

Forecast/Observation	Individual alert thresholds during week before the event				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
8 days forecast	>300mm	NA	NA	NA	NA
4 days forecast	>150mm	NA	NA	NA	>500mm including the event days
24 hour forecast	>50mm	>150mm	>250mm	NA	NA
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Directive from SES	Directive from SES	Directive from SES	Directive from SES
Radar	Moderate or heavy after >50mm in 24hrs	NA	NA	NA	NA
Fallen rain in 24 hours	>50mm plus more forecast	>100mm plus >50mm forecast or >150mm fallen	>150mm plus >50mm forecast or >200mm fallen	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	NA
Water on site	100mm anywhere on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	Within 200mm of lower parts of spine road.	NA
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes cut and Orange Alert threshold reached	NA

Forecast/Observation	Individual alert thresholds one day before the event				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
4 days forecast	>100mm	NA	NA	NA	NA
24 hour forecast	>50mm	>100mm	>200mm	NA	> 400mm
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Warning from BOM/SES	Flood Warning from BOM/SES	Direcive from SES	Directive from SES
Radar	Moderate after >50mm in 24hrs	Moderate or heavy after >50mm in 24hrs	Heavy after >100mm in 24 hrs	NA	NA
Fallen rain in 24 hours	>50mm plus more forecast	>100mm plus more or >150mm fallen	>150mm plus more forecast	NA	> 300mm
Recent local rain gauge readings	>30mm in 3 hrs	>70mm in 3 hrs	NA	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.5m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m*
Water on site	100mm anywhere on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	Within 200mm of lower parts of spine road.	More than 300mm depth in areas being used
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes cut and Orange Alert threshold reached	NA

Forecast/Observation	Individual alert thresholds on day one or two of the event				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
4 days forecast	300mm	NA	NA	NA	NA
24 hour forecast	>50mm	>100mm	>150mm	NA	300mm rain
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Warning from BOM/SES	Flood Warning from BOM/SES	Direcive from SES	Directive from SES
Radar	Moderate after >50mm in 24hrs	Moderate or heavy after >50mm in 24hrs	Heavy after >100mm in 24 hrs	NA	NA
Fallen rain in 24 hours	>50mm plus more forecast	>100mm plus more or >150mm fallen	>150mm plus more forecast	NA	250mm rain
Recent local rain gauge readings	>30mm in 3 hrs	>70mm in 3 hrs	NA	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >2.5m Yelgun (Marshalls) Creek >4.5m
Water on site	100mm anywhere on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	Within 200mm of lower parts of spine road.	More than 300mm depth in areas being used
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes cut and Orange Alert threshold reached	NA

Forecast/Observation	Individual alert thresholds on final day				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
24 hour forecast	>100mm	>200mm	>200mm	NA	NA
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Evacuation directive from SES	Directive from SES	Direcive from SES	Directive from SES
Radar	Moderate after >50mm in 24hrs	Heavy after >100mm in 24hrs	Heavy after >150mm in 24 hrs	NA	NA
Fallen rain in 24 hours	>50mm plus more forecast	>100mm plus more or >150mm fallen	>150mm plus more forecast	NA	250mm rain
Recent local rain gauge readings	>30mm in 3 hrs	>70mm in 3 hrs	NA	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >2.5m Yelgun (Marshalls) Creek >4.5m
Water on site	100mm anywhere on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	Within 200mm of lower parts of spine road.	More than 300mm depth in areas being used
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes cut and Orange Alert threshold reached	NA

Forecast/Observation	Individual alert thresholds During Bump Out				
	FLOOD WATCH	**FLOOD WARNING**	**EVACUATION**	**TAKE REFUGE**	**CANCEL**
8 days forecast	>300mm	NA	NA	NA	NA
4 days forecast	>150mm	NA	NA	NA	NA
24 hour forecast	>50mm	>250mm	>275mm	NA	NA
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Directive from SES	Directive from SES	Directive from SES	NA
Radar	Moderate or heavy after >100mm in 24hrs	Heavy after >175mm in 24hrs	Heavy after >275mm in 24hrs	NA	NA
Fallen rain in 24 hours	>100mm plus more forecast	>150mm plus >75mm forecast or >200mm fallen	>200mm plus >75mm forecast or >250mm fallen	NA	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	NA
Water on site	100mm anywhere on site	More than 100mm depth in areas being used	More than 200mm depth in areas being used	Within 200mm of lower parts of spine road.	NA
External Roads	Any local roads cut by floodwaters	NA	NA	North and South routes and Orange Alert threshold reached	NA

The rainfall forecasts and radar thresholds apply to observations for the site or within a 10km arc from north through west to south of the site. Rainfall gauging applies to Upper Crabbes Creek, Crabbes Creek and Yelgun Creek. Should those rain gauges fail during an event, rainfall gauging from Burringbar and Lacks Creek/Middle Pocket may be used as an alternative.

External roads refer to the routes north and south of the site all the way to the Pacific Highway.

Roles and Responsibilities

(cc) State Emergency Service

The NSW State Emergency Service is the lead combat agency for flooding in NSW. It can command resources from other government organisations including local councils, Roads and Traffic Authority and the Police to assist in flood operations under its command. The Byron Shire Local Flood Plan sets out preparedness measures, the conduct of response operations and the coordination of immediate recovery measures from flooding within the Byron Shire council area.

Under the State Emergency and Rescue Management Act, 1989, the SES has the power to direct any citizen or organisation to take actions in response to flooding. This includes the power to order evacuations.

Any flood response directive issued by the SES or by delegated authority to others acting on its behalf must be followed by North Byron Parklands staff, event staff, artists, suppliers and patrons. This includes any order to evacuate the site or not evacuate the site, irrespective of what decisions have been made by management in accordance with this Plan.

(dd) Parklands Site Management

Parkland's Venue Manager or delegate will be responsible for ensuring that this Flood Risk Management Plan is:

- kept up to date;
- reviewed after any flood or site evacuation;
- included in induction and training of site staff to a level appropriate to their responsibilities under the Plan; and
- provided to event managers during the planning phase of the event.

The Parkland's Venue Manager or delegate will also be responsible for:

- Monitoring weather and site conditions and BoM warnings and make decisions in relation to all alert levels other than Black – Cancel.
- Seeking advice from BoM and SES, preferably at least two days in advance of an upcoming event or bump-in period, if any alert level is triggered before the event commences
- Communicating changes in alert levels to the Event Producer promptly
- Reviewing and providing feedback on Event Flood Evacuation Plans to ensure consistency with this Flood Risk Management Plan

The Venue Manager is solely responsible for elevating alert levels from White to Blue and Blue to Yellow. Moving to Orange or Red would require consultation between the Venue Manager, Event Producer, SES and Police.

The Event Producer, SES and Police will be responsible for deciding whether to move to Orange or Red noting that the SES is the lead agency for flood events.

The Parkland's Venue Manager will provide information and advice to the Event Producer to assist in a decision in relation to alert level Black – cancel.

If there is not a legislative requirement to move to orange (i.e. the SES has not ordered an evacuation), then the authority will fall to the Event Producer. Moving to red would be the same as Orange. Event cancellation would ultimately rest with the Event Producer in consultation with the Venue Manager. In all these cases the Event Producer would be responsible for delegating responsibilities to their event staff, site crew, camping and car parking staff, security, bar managers, etc.

(ee) Event Producer

The Event Producer or delegate will be responsible for ensuring that:

- An event Flood Evacuation Plan, consistent with this Plan, is prepared for each event
- All relevant event staff are inducted into the Event Flood Evacuation Plan to a level

appropriate to their responsibilities under the Plan

- Weather and site conditions and BoM warnings are monitored
- The Event Flood Evacuation Plan is implemented in accordance with the alert level
- Decisions in relation to alert level Black are made – Cancel
- Appropriate measures outside of the Event Flood Evacuation Plan are taken to manage the financial risks which flooding poses to the event, organisers and brand.

Using this Plan

The following sections set out the general flood management actions which need to be taken:

- Before and during an event irrespective of the flood alert level
- In Blue Alert – Flood Watch
- In a Yellow Alert – Flood Warning
- In an Orange Alert – Evacuation
- In a Red Alert – Take Refuge
- In a Black Alert – Event Cancellation
- After a Flood

Communication Methods

Different communication methods and channels will be available to the Event Producer, staff and patrons at any moment before, during and after the event. The selected communication methods are specific to the type of user and are summarised in the following sections.

(ff) Event Producer and Staff

The Event Producer will communicate with all the event staff using the following methods:

- Via the two-way radio system;
- At regular OH&S tool box meetings;
- At regular manager meetings; and
- Via "push" notifications to the Event Staff mobile phone application. For each event, an event-specific mobile App will be provided to all staff. This App will provide details such as maps, contact numbers, radio channels, locations of emergency and medical services across. The App will also allow to send every user a "push" notification (i.e. a prioritised message that will appear on the screen of the mobile device receiving it immediately after this was sent).

(gg) Patrons

The Event Producer and staff will be able to communicate with on-site and off-site patrons using the following methods:

- Email to the ticket purchaser (where possible);
- Event website;
- Facebook and Instagram accounts;
- General media releases including radio coverage;
- Wherepossible, the use of SMS notifications, and
- "Push" notifications using the Event mobile phone application specifically developed for patrons. When purchasing a ticket for the event, all patrons will be asked to download an event-specific mobile App. The App will provide information such as site maps, location of services, and alert messages during the event. Patrons will be asked by the event staff to download the Event App when they arrive to the site and will be reminded to do so throughout the duration of the event.

In addition, there will be means of communicating with patrons which is specific to a particular alert level as detailed in the relevant sections of this Plan.

5. Management Actions – Before and During an Event

This Section sets out all of the actions which will be taken in managing the site and planning and running events irrespective of the Flood Alert level which applies.

New Stream Gauges

Trigger for action: Always

Parklands has installed two stream gauges to better monitor water levels within the catchments and three rainfall gauges to monitor local rainfall. The gauges are linked into the existing ENVIROMON system to assist in flood forecasting for the whole region.

These gauges must always be properly maintained by people experienced in the maintenance of the gauges and associated hardware and software (i.e. Manly Hydraulics Laboratory).

Emergency Contact Details

Trigger for action: Always

The Event Producer will be responsible for keeping the list of Site Emergency Contacts in Section 12 up to date in their Event Flood Evacuation Plan. These will be reviewed and updated prior to bump-in for each event.

Under the Event Flood Evacuation Plan the Event Producer will be responsible for ensuring that the most current version of emergency contacts is available to the Local SES Controller immediately prior to a large event being held.

Planning and Layout

Trigger for action: Always

During events which do not require the full capacity of the camping and parking areas – the area which is unused will be located within the areas of the greatest flood risk.

Camping will be kept away from the farthest edge of the north-eastern boundary to reduce the distance to higher ground where possible. Security fencing will be erected around the event area to prevent unlawful entry.

The spine road and pedestrian walkway are both above the 1 in 100 chance per year flood so that for smaller events, and in the early stages of larger events, there will be clearly defined paths for patrons to use.

The nominated Emergency Assembly Area for flood related emergencies is the Amphitheatre, at the western end of the event site (Figure 19). The Amphitheatre is located in a flood- free area, has toilet facilities, water supply, and can host up to 22,000 people. Additional people would be able to take refugee on the neighbouring flood-free high-grounds north and west of the Amphitheatre. It is estimated that this area could host all patrons and staff in a large event (i.e. 50,000 patrons). The Amphitheatre can be reached using the spine road, which would be entirely flood free in the first phases of a PMF.

Currently, only certain parts of the site have access to permanent power supplies. The majority of power for the proposed events would be generator driven. A number of large floodlights on movable diesel generator trailers are proposed to light key areas. Lanterns that are strung up above the ground are proposed to light the internal walkways and access roads including the main amphitheatre. The spine road has a combination of lanterns and diesel driven light towers in place.

When the site is being set up for an event, where possible and safe to do so, all electrical equipment will be kept off the ground. Large immobile generators, where possible, will be located above the 1 in 100 flood level. This will reduce the risk of electrocution and ensure that lighting will be able to continue operating if a flood were to occur.

For large events a full triage of medical staff and resources, including the services of a Registered Doctor to provide a GP style clinic with nurses and paramedics will be required. These will all be located close to the performance areas for medical reasons but will be moved adjacent to the flood emergency assembly area in the event of a Yellow Alert or above.

A dedicated potable water reticulation line will connect the combined bulk 580,000 litre potable water storage tanks with a 23,000 litre potable water storage tank located in the primary flood assembly area. Water will be pumped from the bulk tanks to the 23Kl tank, continually filling it as water is used. The bulk tanks are co-located with their own pump and diesel generator situated above the PMF level.

This water would be used for drinking water supplies for those sheltering on site and would be able to provide 2-4 litres of potable drinking water for each person which would be sufficient for 24hours. In addition, there will be pallets of bottled water supplies which have been delivered for the event and transported to the refuge area.

56 composting human waste facilities are located in a designated flood free area which is accessible from the flood emergency assembly area without

the need for people to traverse floodwaters (i.e. at the top of the amphitheatre).

For a large event there will be sufficient onsite food vendors, caterers and the Parklands General Store capable of providing food to the entire event population for a period of up to 48 hours without the need for restocking.

In particular, Event Producers will directly control the General Store (which sells a wide provision of dry foods, basic medical suppliers and camping equipment (i.e. batteries and torches, etc).

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Training

Trigger for action: At Induction

Training in flood awareness and response procedures will be given to permanent Parklands staff, such as the Venue Manager and his/her immediately staff members. The Venue Manager and designated staff will be given specific training in weather and flood monitoring and will be responsible for escalating the levels of alert, warning and response as detailed in this plan

Flood awareness inductions would be provided to event managers as well as event specific staff including relevant bump in/bump out crews, security, camp marshals, bar and food staff and cleaning crews.

For event staff this will be undertaken as part of the staff induction process which already exists for OH&S and environmental procedures.

Forecast Monitoring

Trigger for action: From one week before bump in to bump out

Monitoring the weather forecasts will be the most important step in managing flood risk and response. Parklands management will nominate the Venue Manager for being responsible for reviewing weather, current and predicted rainfall, weather and flood warnings and stream levels, as outlined in Section 3.4.2.

When an event is scheduled and confirmed, the Venue Manager will begin monitoring the forecasts one week in advance to the commencement of the bump in. This monitoring will be continued daily throughout the bump-in stage, the event and the bump-out stage.

The frequency of monitoring will be commensurate with the alert level.

- Normal and All Clear – White – daily monitoring
- Flood Watch – Blue – hourly monitoring
- Flood Warning/Evacuation/Take Refuge – Yellow/Orange/Red - continuous

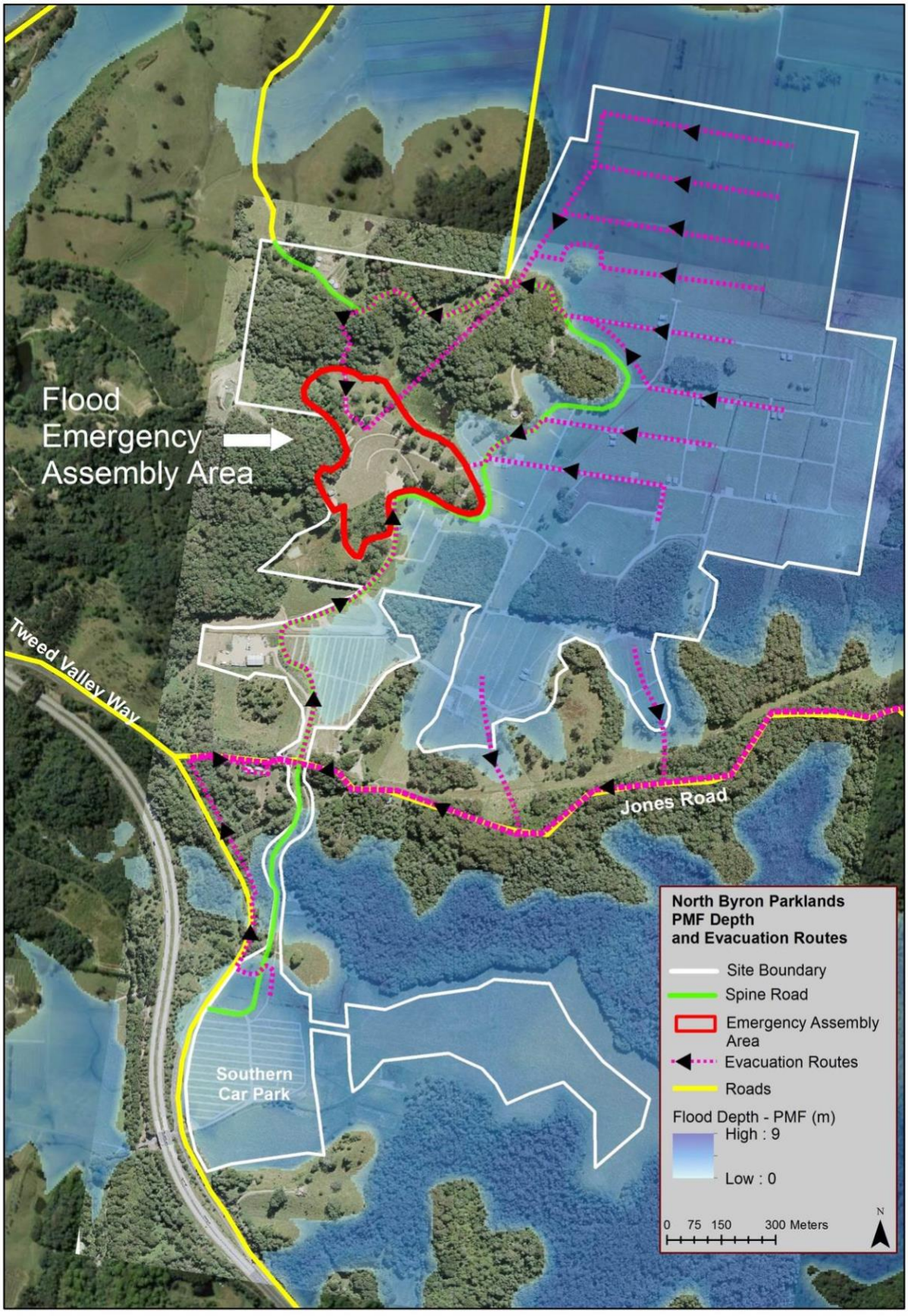

Figure 19. Flood Emergency Assembly Area

Communication with SES

Trigger for action: From one month before bump in to end of bump out

The Event Producer will be responsible for providing a copy of the Event Flood Evacuation Plan including emergency contact details to the Local Emergency Management Committee.

In the lead up to the event and during the event the Venue Manager will advise the SES Local Controller of any changes in the alert level.

The Venue Manager will consult with the SES Local Controller before escalating to Alert Levels Yellow or Red.

The Venue Manager will take advice and following directions from the SES Local Controller if given.

Communication with Event Producer

Trigger for action: one week before bump in to bump out

The Venue Manager will be responsible for keeping the Event Producer informed of unfolding weather conditions and changes in alert levels.

The Venue Manager will consult with the Event Producer before escalating Alert Levels to Yellow or Red.

Communication with Staff, Artists and Suppliers

Trigger for action: From one week before bump in to end of bump out

In the lead up to the event and during the event the Event Producer will advise staff and suppliers of any changes in the alert level and ensure they undertake the actions appropriate to that alert level. Communications will use the methods listed in Section 4.5.

Communication with Patrons

Trigger for action: ticket purchase

When patrons purchase tickets for events, they will be asked to download the event mobile application. This will contain information on flood risk and will allow them to receive push notifications from the Event Producer and staff. The application will also provide information on the potential for cancellation of the event, evacuation (if necessary), as well as general emergency awareness messages.

Trigger for action: Change in Flood Alert

Whenever there is a change in flood alert level to yellow or above, patrons will be notified using the means of communication listed in Section 4.5.

6. Management Actions – Blue alert – flood watch

The following are the specific actions which will be taken should any one of the thresholds in Table 8 be exceeded for escalation to Blue Alert – Flood Watch or the Venue Manager escalates to Blue Alert in light of other information.

The thresholds for Blue Alert are repeated in Table 8 for each phase of an event. They do not generally vary between phases other than where the duration of the forecast exceeds the duration of the phase. In the case of fallen rain however, a lower threshold is used during the event because this is the phase with the greatest potential flood consequences.

The flood management actions are set out in the following sections for each phase of the event.

Bump In

(hh) Forecast Monitoring

The Venue Manager will monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and monitor conditions on site hourly. The Venue Manager will provide six-hourly updates to the Event Producer or when there is a significant change in conditions.

(ii) Event Modification

The Event Producer will consider whether modifications need to be made to the Event layout, activities or program to reduce risks to patrons, artists, assets or finances taking into consideration the relative timing of the potential flooding and the Event.

(jj) Communication with Staff

The Event Producer will advise all event management personnel of the possibility of flooding and the steps to be undertaken if it does eventuate. This information will be communicated using the methods listed in Section 4.5.

Key managers to be advised will include the Security Managers, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist. They will be advised of any changes to layout, activities or program.

These people will be responsible for communicating the information to their relevant staff members for each of the areas. They will also remind them of the staff responsibilities and procedures should the alert level escalate.

(kk) Communication with Suppliers

The Event Producer will advise suppliers of the change in alert level and request them to develop contingency plans for timing of deliveries and Event set up should flooding disrupt bump in. They will be advised of any changes to layout, activities or program where that is relevant to them.

(ll) Communication with Artists

The Event Producer will advise artists of changes to the program or activities where that impacts on the artist.

During Week Before the Event

If a Blue Alert is called or in place during the week before the Event then the following actions will be taken in addition to those which occur during bump in.

(mm) Communication with BoM

The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least two days before the event to get more detailed interpretation of forecasts for the days of the event.

(nn) Communication with **Patrons**

There will be no patrons on site a week before the event but they will be informed that a Blue Alert is in place through the communication methods listed in Section 4.5.

Day Before the Event

If a Blue Alert is called or in place on the day before the Event, the following actions will be taken in addition to those which occur during bump in.

(oo) Communication with Patrons

a) Patrons off Site

Off-site patrons will be informed of the possibility of flooding using the communication methods listed in Section 4.5.

b) Patrons on Site

In case a Blue Alert is in place when patrons are arriving onsite or are already on site, patrons will be advised to have a designated driver who is capable of driving until further notified. All patrons will be asked by camping and accreditation staff, if they haven't already done so, to download the event mobile phone application which will provide real time information about the potential for flooding. A suggested outline of the content of this information resource is provided in Appendix A.

The camp marshals who are in charge of discrete predefined camping zones will ensure that appropriate evacuation signage and information is ready for camping patrons.

(pp) Communication with Artists

The Event Producer will advise artists of the possibility of flooding and what they will need to do in the event of a flood.

During the Event

If a Blue Alert is called or in place during the Event then the following actions will be taken.

(qq) Forecast Monitoring

The Venue Manager will monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 3.7 and monitor conditions on site hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least once daily for a more detailed interpretation of forecasts. The Venue Manager will provide six-hourly updates to the Event Producer or when there is a significant change in conditions.

(rr) Event Modification

The Event Producer will consider whether modifications need to be made to the activities or program to reduce risks to patrons, artists, assets or finances.

(ss) Communication with Staff

The Event Producer will advise all event management personnel of the possibility of flooding and the steps to be undertaken if it does eventuate. This information will be communicated using the methods listed in Section 4.5.

Key managers to be advised will include the Security Managers, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist. They will be advised of any changes to layout, activities or program.

These people will be responsible for communicating the information to their relevant staff members for each of the areas. They will also remind them of the staff responsibilities and procedures should the alert level escalate.

(tt) Communication with Suppliers

The Event Producer will advise suppliers of any changes to their deliveries due to change in activities or program.

(uu) Communication with Artists

The Event Producer will advise artists of changes to the program or activities where that impacts on the artist.

(vv) Communication with Patrons

a) Patrons off Site

Patrons who are off-site will be advised of the possibility of flooding using the communication methods listed in Section 4.5.

b) Patrons on Site

In the case where the Blue Alert is in place when patrons are arriving onsite or are already on site, patrons will be advised to have a designated driver who is capable of driving until further notified. All patrons will be asked by camping and accreditation staff, if they haven't already done so, to download the event mobile phone application which will provide real time information about the potential for flooding. A suggested outline of the content of this information resource is provided in Appendix A.

The camp marshals who are in charge of discrete predefined camping zones will ensure that appropriate evacuation signage and information is ready for camping patrons.

Bump Out

(ww) Forecast Monitoring

The Venue Manager will monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 3.7 and monitor conditions on site hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least once daily for a more detailed interpretation of forecasts. The Venue Manager will provide six hourly updates to the Event Producer or when there is a significant change in conditions.

(xx) Communication with Staff

The Event Producer will advise all event management personnel of the possibility of flooding and the steps to be undertaken if it does eventuate. This information will be communicated to the Security Manager, site and production managers, staffing co-ordinator, and external site manager. These people will be responsible for communicating the information to their relevant staff members for each of the areas. They will also remind them of the staff responsibilities and procedures should the alert level escalate during

bump out. All communications will use the methods listed in Section 4.5.

(yy) Communication with Suppliers

The Event Producer will advise suppliers of the change in alert level and request them to develop contingency plans should flooding disrupt bump out.

Table 8. Blue Alert Thresholds by Event Phase

Forecast/Observation	**Bump in**	**During Week Before**	**Day Before**	**Day 1 or 2**	**Final Day**	**Bump Out**
8 days forecast	>300mm	>300mm	NA	NA	NA	>300mm
4 days forecast	>150mm	>150mm	>100mm	300mm	NA	>150mm
24 hour forecast	>50mm	>50mm	>50mm	>50mm	>100mm	>50mm
Flood warnings	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES	Flood Watch, Severe Weather Warning or Flood Warnings from BOM/SES
Radar	Moderate or heavy after >50mm in 24hrs	Moderate or heavy after >50mm in 24hrs	Moderate after >50mm in 24hrs	Moderate after >50mm in 24hrs	Moderate after >50mm in 24hrs	Moderate or heavy after >100mm in 24hrs
Fallen rain in 24 hours	>50mm plus more forecast	>50mm plus more forecast	>50mm plus more forecast	>50mm plus more forecast	>50mm plus more forecast	>100mm plus more forecast
Recent local rain gauge readings	NA	NA	>30mm in 3 hrs	>30mm in 3 hrs	>30mm in 3 hrs	NA
Stream gauge readings	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising	Northern Drain >1.3m and rising Yelgun (Marshalls) Creek >1.3m and rising
Water on site	NA	100mm anywhere on site	100mm anywhere on site	>30mm in 3 hrs	100mm anywhere on site	100mm anywhere on site
External Roads	Any local roads cut by floodwaters	Any local roads cut by floodwaters	Any local roads cut by floodwaters	100mm anywhere on site	Any local roads cut by floodwaters	Any local roads cut by floodwaters

7. Management Actions – Yellow alert – flood warning

The following are the specific actions which will be taken should any one of the thresholds in Table 7 be exceeded for escalation to Yellow Alert – Flood Warning or the Venue Manager escalates to Yellow Alert in light of other information.

The thresholds for Yellow Alert are repeated in Table 9 for each phase of an event. They vary significantly between bump in, bump out and when campers are on site before and during the event because in the absence of campers, the time to evacuate the site is much less and the consequence of failing to evacuate are much less significant. Therefore during the event the thresholds for flood warning are generally lower than for bump in and bump out.

The flood management actions are set out in the following sections for each phase of the event.

Bump In

(zz) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 3.7 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(aaa) Event Modification

The Event Producer will consider whether modifications need to be made to the Event layout, activities or program to reduce risks to patrons, artists, assets or finances taking into consideration the relative timing of the potential flooding and the Event.

(bbb) Communication with Staff

The Event Producer will advise all event management personnel of the escalated Flood Alert level and remind them of the steps to be undertaken at this alert level and higher levels

This information will be communicated to staff using the methods listed in Section 4.5.

Key managers to be advised will include the Security Managers, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist. They will be advised of any changes to layout, activities or program.

These people will be responsible for communicating the information to their relevant staff members for each of the areas. They will also remind them of the staff responsibilities and procedures should the alert level escalate.

(ccc) Communication with Suppliers

The Event Producer will advise suppliers of the change in alert level and request them to develop contingency plans for timing of deliveries and Event set up should flooding disrupt bump in. They will be advised of any changes to layout, activities or program where that is relevant to them.

They will be requested to temporarily move as many of the supplies as is practical to flood free locations.

(ddd) Communication with Artists

The Event Producer will advise artists of changes to the program or activities where that impacts on the artist.

During Week Before the Event

If a Yellow Alert is called or in place during the week before the Event, the following actions will be taken in addition to those which occur during bump in.

(eee) Serving of Alcohol

There is no service of alcohol one week before the event.

(fff) Communication with off Site Patrons

Depending on the event size, patrons may be allowed to access the site not earlier than the day before the event. Apart from this day, which is addressed in Section 7.3, no patrons will be onsite in the week before the event.

Information on the possibility of a flooding and associated possible cancellation of the event will be made available to off-site patrons using the methods listed in Section 4.5.

Communications will also discuss what to do should flooding occur during the event. Any major changes to the program or activities will be described.

(ggg) Communication with Artists

The Event Producer will advise artists of the possibility of flooding and what they will need to do in the event of a flood when they are performing.

Day Before the Event

(hhh) Communication with Patrons

a) Patrons off Site

Communications with patrons off site will use the methods listed in Section 4.5.

Patrons off site will be made aware of the flood risk and of the possible event cancellation. Communications will also contain information on what to do should flooding occur during the event. Any major changes to the program or activities will be described.

b) Patrons on Site

In the case where the Yellow Alert is in place when patrons are arriving onsite or are already on site, this will be communicated to patrons using the methods listed in Section 4.5.

All patrons will be asked, if they haven't already done so, to download the event mobile phone application which will provide real time information about the flooding.

A suggested outline of the content of this information resource is provided in Appendix A.

During the Event

If a Yellow Alert is called during the Event then the following actions will be taken.

(iii) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(jjj) Communication with **Staff**

The Event Producer will advise all event management personnel of the escalation to Yellow Alert. This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist. They will be advised of any changes to activities in addition to those which will be stopped or modified as part of the standard Yellow Alert procedures.These people will be responsible for communicating the information to their relevant staff members for each of the areas and direct them to take actions in accordance with the Event Flood Management Plan for Yellow Alert.

They will also remind them of the staff responsibilities and procedures should the alert level escalate.

All communications to staff will use the methods listed in Section 4.5

(kkk) Event Modification

Performances will cease.

The Event Producer will consider whether other activities need to cease or be modified to reduce risks to patrons, artists, assets or finances.

If the Yellow Alert thresholds are exceeded for more than four hours the Event Producer should discuss with the Venue Manager the merits of escalating to Orange Alert or even Black Alert because it is not safe to recommence Event activities with this level of flood risk.

(lll) Serving of Alcohol

Serving of all alcohol will cease.

(mmm) Relocation or Modification of Assets

The following measures will be undertaken where the Yellow Alert thresholds are exceeded for more than four hours:

- Relevant sections of internal fencing will be opened up to facilitate rapid return of patrons to their vehicles.
- The primary medical facilities centre (or parts thereof) will be relocated to a designated area adjacent to the Flood Emergency Assembly Area.
- Bottled water supplies and food supplies will be relocated to above the Flood Emergency Assembly Area.
- There will be around 100,000 bottles of 600ml water onsite. In addition, water will be accessible from the main 200580,000L main

potable water supply tank (via connecting pipe reticulation).

- Where possible, food stall holders will move their trailers or relocate their vans and/or supplies to a flood free area safely accessible from the Flood Emergency Assembly Area.
- As many waste and recycling receptacles as possible will be moved to the designated flood emergency waste management area.
- All fuel stored on site will be moved to locations which are flood free.
- Mobile generators and lighting systems will be relocated as necessary to aid evacuation. This will include floodlighting of the camping grounds at night to assist people in packing up.

Temporary power, a public address system and lighting equipment will be set up at the Flood Emergency Assembly Area. Spare resources such as torches, batteries and communication devices will be moved to this location. Any sound or lighting equipment which is below the 1 in 100 flood level will be moved to a higher location if practical.

(nnn) Communication with Suppliers

The Event Producer will advise suppliers to cease deliveries until further notice and remove any of their wastes if they have a responsibility to do so and it is practical to do so in the time available.

(ooo) Communication with Artists

The Event Producer will advise artists to pack up their equipment. Those who have to leave for other engagements will be advised to do so. Modifications to the program will be discussed with the other artists who have more flexibility in their schedule.

(ppp) Communication with Patrons

a) Patrons off Site

All communications to patrons will employ the methods listed in Section 4.5.

Patrons will be told that there is a flood warning and the site is temporarily closed. Communication messages will also re-iterate the possibilities of event cancellation and contain information on what to do should flooding occur. Any major changes to the program or activities will be described.

A media release will be issued and publicist will be available for radio interviews.

Electronic message boards which are located on the roads 20km either side of the event will be used to advise travellers of the flood warning and temporary site closure.

b) Patrons arriving at Site

Any patrons who arrive at the Site during a Yellow Alert will be advised of the Flood Warning and asked to leave and return when the All Clear is given or the Alert level returns to Blue Alert. Patrons will also be asked to download the event mobile App to receive updates on changes in flood alerts. In addition to this, the communication methods listed in Section 4.5 will also be used.

c) Patrons on Site

Using the communication methods listed in Section 4.5, patrons will be requested to return to their vehicles to await further instructions. If they are camping they will be requested to pack up their tents and camping equipment. Patrons may leave if they wish unless the SES has directed that they not do so.

The Venue Manager will monitor the myroadsinfo website and confer with the SES to check whether external roads between the site and the Pacific Highway are cut by flooding. If the Venue Manager is aware of any roads which have been blocked by flooding he/she is obliged to pass that advice on to all patrons.

The site public address system, large video screens and variable message signage around the site will be used to communicate Yellow Alert instructions to patrons. It will include the standard SES advice not to walk, drive or ride through floodwaters.

The camp marshals who are in charge of discrete, predefined camping zones will ensure that appropriate signage and information is ready for camping patrons. They will visit each camping site to ensure that all patrons are aware of the Yellow Alert.

Police and security personnel will be responsible for ensuring that patrons return to their vehicles in an orderly manner.

Bump Out

(qqq) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or if the situation changes.

(rrr) Communication with Staff and Suppliers

The Event Producer will advise all event management personnel of the escalated alert to Yellow Alert and the possibility of flooding. They will be reminded of the steps to be undertaken immediately and of the additional steps should flooding eventuate. This information will be communicated to the Security Manager, site and production managers, staffing co-ordinator, and external site manager These people will be responsible for communicating the information to their relevant staff members for each of the areas. They will also remind them of the staff responsibilities and procedures should the alert level escalate during bump out.

The Event Producer will advise suppliers of the change in alert level and request them to develop contingency plans should flooding disrupt bump out.

(sss) Reschedule Activities

Where possible, bump out activities will be rescheduled to accelerate the removal of flood-vulnerable assets from the areas at risk of flooding.

Table 9. Yellow Alert Thresholds by Event Phase

Forecast/Observation	**Bump in**	**During Week Before**	**Day Before**	**Day 1 or 2**	**Final Day**	**Bump Out**
24 hour forecast	>150mm	>150mm	>100mm	>100mm	>200mm	>250mm
Flood warnings	Directive from SES	Directive from SES	Flood Warning from BOM/SES	Flood Warning from BOM/SES	Evacuation directive from SES	Directive from SES
Radar	NA	NA	Moderate or heavy after >50mm in 24hrs	Moderate or heavy after >50mm in 24hrs	Heavy after >100mm in 24hrs	Heavy after >175mm in 24hrs
Fallen rain in 24 hours	>100mm plus more forecast or >150mm fallen	>100mm plus >50mm forecast or >150mm fallen	>100mm plus more or >150mm fallen	>100mm plus more or >150mm fallen	>100mm plus more or >150mm fallen	>150mm plus >75mm forecast or >200mm fallen
Recent local rain gauge readings			>70mm in 3 hrs	>70mm in 3 hrs	>70mm in 3 hrs	
Stream gauge readings	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising	Northern Drain >1.8m and rising Yelgun (Marshalls) Creek >1.8m and rising
Water on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used

8. Management Actions – Orange alert – Evacuation

The following are the specific actions which will be taken should any one of the thresholds in Table 7 be exceeded for escalation to Orange Alert – Flood Evacuation or the Venue Manager escalates to Orange Alert in light of other information.

The thresholds for Orange Alert are repeated in Table 10 for each phase of an event. They vary significantly between bump in, bump out and when campers are on site before and during the event because in the absence of campers, the time to evacuate the site is much less and the consequence of failing to evacuate are much less significant. Therefore, during the event the thresholds for evacuation are generally lower than for bump in and bump out.

The flood management actions are set out in the following sections for each phase of the event.

Bump In

(ttt) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(uuu) Event Modification

The Event Producer will consider whether modifications need to be made to the Event layout, activities or program to reduce risks to patrons, artists, assets or finances taking into consideration the relative timing of the potential flooding and the Event.

(vvv) Communication with Staff

The Event Producer will advise all event management personnel of the escalated Flood Alert level and remind them of the steps to be undertaken at this alert level.

This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist. They will be advised of any changes to layout, activities or program.

They will be reminded that they need to evacuate the site when their roles in the evacuation are complete.

These people will be responsible for communicating the information to their relevant staff members for each of the areas.

All communications to staff will use the channels listed in Section 4.5.

(www) Communication with Suppliers

The Event Producer will advise suppliers of the change in alert level and request them to develop contingency plans for timing of deliveries and Event set up should flooding disrupt bump in. They will be advised of any changes to layout, activities or program where that is relevant to them.

They will be requested to cease activity on site, evacuate staff and stop all deliveries until the flood alert drops to Yellow, Blue or White .

(xxx) Communication with Artists

The Event Producer will advise artists of changes to the program or activities where that impacts on the artist.

During Week Before the Event

If an Orange Alert is called or in place during the week before the Event then the following actions will be taken in addition to those which occur during bump in.

(yyy) Communication with Off Site Patrons

Using the communication methods listed in Section 4.5, patrons will be informed that the site has been temporarily closed because of a high likelihood of flooding and the event may be cancelled. Communication messageswill also contain information on what to do should flooding occur during the event. Any major changes to the program or activities will be described.

Patrons will also be referred to their ticket purchase conditions and to the Event website for further details.

A media release will be issued and publicist will be available for radio interviews.

Electronic message boards which are located on the roads 20km either side of the event will be used to

advise travellers of the evacuation and temporary site closure.

(zzz) Communication with Artists

The Event Producer will advise artists to leave the site.

During the Event

If an Orange Alert is called during the Event then the following actions will be taken.

(aaaa) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(bbbb) Communication with Staff

Using the communication methods listed in Section 4.5, the Event Producer will advise all event management personnel of the escalation to Orange Alert. This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager, and the publicist.

These people will be responsible for communicating the information to their relevant staff members for each of the areas and direct them to take actions in accordance with the Event Flood Management Plan for Orange Alert.

(cccc) Communication with Patrons

a) Patrons off Site

Using the communication methods listed in Section 4.5, patrons will be informed that the site has been temporarily closed because of a high likelihood of flooding and that the event may be cancelled. Communications to patrons will also advise on what to do should flooding occur during the event. Any major changes to the program or activities will be described.

A media release will be issued and publicist will be available for radio interviews.

Electronic message boards which are located on the roads 20km either side of the event will be used to advise travellers of the evacuation and temporary site closure.

b) Patrons arriving at Site

Any patrons who arrive at the Site during an Orange Alert will be advised of the Flood Evacuation and be asked to leave and return when the All Clear is given or the Alert level returns to Blue Alert. Patrons will be asked to download the event mobile application to monitor changes in the alert level and receive push notification as these are issued from the event management. In addition to the mobile app, all communication methods listed in Section 4.5. may be used.

c) Patrons already on Site

The camp marshals who are in charge of discrete predefined camping zones will advise patrons in their zone to leave when instructed to do so, the order in which evacuation will take place and the indicative timing of evacuation.

The site public address system, large video screens and variable message signage around the site will be used to communicate Orange Alert instructions to patrons. It will include the standard SES advice not to walk, drive or ride through floodwaters. In addition to this, the communication methods listed in Section 4.5. will be used.

Police, traffic marshals and security personnel will be responsible for ensuring that patrons drive out in an orderly manner.

(dddd) Serving of Alcohol

Serving of all alcohol will cease.

(eeee) Directing of Vehicles

Vehicles in the southern car park will be directed to exit via the main gate and head south. Traffic marshals will direct vehicles in the lowest parts of the carpark to leave first.

Vehicles in the northern car park and the camping grounds will exit via Gate S onto Jones Road and head north on Tweed Valley Way. Camp marshals shall direct vehicles at the farthest end of the camping ground to exit first.

All access tracks within the camping ground will have reflective guideposts where they cross drainage lines and will be lit by light towers as for as

long as the generators are not flood affected. The spine road will have reflective posts along both sides for its full length. These measures will reduce the risk of vehicles accidentally leaving the road.

Should vehicles become bogged they will be towed out by the tow trucks on site. Should vehicles break down they will be manually pushed off the road so as not to block the evacuation of other traffic.

Return lanes on the Tweed Valley Way and along the spine road will be kept clear for emergency vehicles.

(ffff) Communication with Suppliers

The Event Producer will advise suppliers to cease deliveries until further notice and remove any of their wastes if they have a responsibility to do so and it is practical to do so in the time available.

(gggg) Communication with Artists

The Event Producer will advise artists to leave the site.

Bump Out

(hhhh) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or if the situation changes.

(iiii) Communication with Staff and Suppliers

The Event Producer will advise all event management personnel to leave the site. This information will be communicated to the Security Manager, site and production managers, staffing co-ordinator, and external site manager. These people will be responsible for communicating the information to their relevant staff members for each of the areas.

The Event Producer will advise suppliers of the change in alert level and request them to leave the site until further notice.

Table 10. Orange Alert Thresholds by Event Phase

Forecast/Observation	**Bump in**	**During Week Before**	**Day Before**	**Day 1 or 2**	**Final Day**	**Bump Out**
24 hour forecast	>250mm	>250mm	>200mm	>150mm	>200mm	>275mm
Flood warnings	Directive from SES	Directive from SES	Flood Warning from BOM/SES	Flood Warning from BOM/SES	Directive from SES	Directive from SES
Radar	NA	NA	Heavy after >100mm in 24 hrs	Heavy after >100mm in 24 hrs	Heavy after >150mm in 24 hrs	Heavy after >275mm in 24hrs
Fallen rain in 24 hours	>150mm plus more forecast or >200mm fallen	>150mm plus >50mm forecast or >200mm fallen	>150mm plus more forecast	>150mm plus more forecast	>150mm plus more forecast	>200mm plus >75mm forecast or >250mm fallen
Stream gauge readings	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.5m	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.3m	Northern Drain >2.1m Yelgun (Marshalls) Creek >2.3m	Northern Drain >2.3m Yelgun (Marshalls) Creek >4.0m
Water on site	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 100mm depth in areas being used	More than 200mm depth in areas being used

9. Management Actions – RED alert – REFUGE

The following are the specific actions which will be taken should any one of the thresholds in Table 7 be exceeded for escalation to Red Alert – Flood Evacuation or the Venue Manager escalates to Red Alert in light of other information.

The thresholds for Red Alert are repeated in Table 11 for each phase of an event. They vary little between bump in, bump out and when campers are on site because they are dictated by an evacuation being prevented by rising water levels.

Forecast/Observation	Bump in	During Week Before	Day Before	Day 1 or 2	
Flood warnings	Directive from SES	Directive from SES	Directive from SES	Directive from SES	Direc
Stream gauge readings	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Nort Yelg >3.0
Water on site	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	With parts
External Roads	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	Nort cut thre

The flood management actions are set out in the following sections for each phase of the event.

Bump In

(jjjj) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(kkkk) Communication with Staff

Using the communication methods listed in Section 4.5, the Event Producer will advise all event management personnel of the escalated Flood Alert level and remind them of the steps to be undertaken at this alert level.

This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager.

They will be reminded that they need to the Flood Evacuation Assembly area when their roles in getting people and equipment safely out of the floodwaters is complete.

These people will be responsible for communicating the information to their relevant staff members for each of the areas.

Everyone will make their way to the Flood Emergency Assembly Area. It is most unlikely this will be necessary during bump out because the number of vehicles and people involved means that there should be sufficient time to evacuate the site, particularly since there will be many trucks amongst these vehicles which can drive through deeper floodwater than can a car.

During Week Before the Event

If Red Alert is called or in place during the week before the Event then the following actions will be taken in addition to those which occur during bump in.

(llll) Communication with Off Site Patrons

Using the communication methods listed in Section 4.5, patrons will be informed that the site has been temporarily closed because of a high likelihood of flooding and that the event may be cancelled. Communications will also contain information on what to do should flooding occur during the event. Any major changes to the program or activities will be described.

A media release will be issued and publicist will be available for radio interviews.

Electronic message boards which are located on the roads 20km either side of the event will be used to advise travellers of the evacuation and temporary site closure.

(mmmm)Catering at Evacuation Area

The medical facilities, lighting, public address system, water, food and waste receptacles will have been moved to the Flood Emergency Assembly Area during the Yellow and Orange Alert Phases. Additional food can be sourced from the general store which effectively is an on-site supermarket with very large dry foods holdings. No alcohol will be provided.

The water in the farm dams will be used for personal hygiene and a temporary area for toileting will be provided outside of the catchment of the farm dams and the Flood Emergency Assembly Area.

There will be no shelter available but at this stage of the event there would be enough space to erect tents because of the small number of people in total who would be on site and the large proportion who are likely to be able to leave before the site floods.

There will be a cleared area in which a helicopter can land in case of a medical emergency which cannot be managed by the triage unit.

During the Event

If a Red Alert is called during the Event then the following actions will be taken.

(nnnn) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or when there is a significant change in conditions.

(oooo) Communication with **Staff**

Using the communication methods listed in Section 4.5, the Event Producer will advise all event management personnel of the escalated Flood Alert level and remind them of the steps to be undertaken at this alert level.

This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager.

They will be reminded that they need to the Flood Evacuation Assembly area when their roles in getting people and equipment safely out of the floodwaters is complete.

These people will be responsible for communicating the information to their relevant staff members for each of the areas.

(pppp) Communication with Patrons

a) Patrons off Site

Using the communication methods listed in Section 4.5, patrons will be informed that the site has been temporarily closed because of a high likelihood of flooding. The possibility of event cancellation will also be reiterated. Communications will also contain information on what to do should flooding occur during the event. Any major changes to the program or activities will be described.

A media release will be issued and publicist will be available for radio interviews.

Electronic message boards which are located on the roads 20km either side of the event will be used to advise travellers of the evacuation and temporary site closure.

b) Patrons arriving at Site

Any patrons who arrive at the Site during a Red Alert will be advised of the temporary site closure and be asked to leave and return when the All Clear is given or the Alert level returns to Blue Alert. Patrons will be asked to download the event mobile App to monitor changes in the alert level and receive push notification as these are issued. In addition to the mobile app, all communication methods listed in Section 4.5. may be used.

c) Patrons already on Site

The traffic marshals, police and security personnel will advise patrons to exit their vehicles, take whatever possessions they can carry and feel that they need, leave the vehicle where it is and walk to the Flood Emergency Evacuation Area (**Error! R**

eference source not found.19). The communication methods listed in Section 4.5. will also be used.

If the site is not yet affected by major flooding, patrons may be instructed to reach the Flood Emergency Evacuation Area directly, that is walking through the event area and following the shortest path to the evacuation area.

Depending on the conditions of the site at the time the evacuation order is issued, the Police, the SES or the Event Manager may decide to direct patrons to the Flood Emergency Evacuation Area through the evacuation routes indicated in **Error! Reference source not found.**19. In this case, traffic marshals, police and security personnel on site will advise patrons on the best evacuation route to be followed depending on the patrons location. Additional personnel will be immediately placed along the designed routes to facilitate the evacuation process.

The site public address system, large video screens and variable message signage around the site will be used to communicate Red Alert instructions to patrons. It will include the standard SES advice not to walk, drive or ride through floodwaters.

The spine road and pedestrian walkway between the event area and the car park are above the 1 in 100 flood level and so it is unlikely that anyone should have to walk through floodwaters.

Patrons camping have a 700-800m walk to high ground, even at an extremely slow pace of 2km/hr; the walk will take only about 15 to 20 mins from the farthest location on the site.

Access to the Jones Road underpass and access across Jones Road will be prevented by barriers and security personnel to prevent patrons attempting to access vehicles in the southern car park which would be at risk of high hazard flooding.

(qqqq) Catering at Evacuation Area

The medical facilities, lighting, public address system, water, food and waste receptacles will have been moved to the Flood Emergency Assembly Area during the Yellow and Orange Alert Phases. Additional food can be sourced from the general store which effectively is an on-site supermarket with very large dry foods holdings. No alcohol will be provided.

The water in the farm dams will be used for personal hygiene and a temporary area for toileting will be provided outside of the catchment of the farm dams and the Flood Emergency Assembly Area.

There will be no shelter available and there will be insufficient space for people to erect tents if all the people from a large event have been unable to evacuate. This is not likely because it will take a few hours for floodwaters to reach a level on site which would prevent driving off site in which time many people will have been able to leave.

There will be a cleared area in which a helicopter can land in case of a medical emergency which cannot be managed by the triage unit.

Bump Out

(rrrr) Forecast Monitoring

The Venue Manager will continually monitor forecasts, warnings and rainfall/stream gauges mentioned in Section 0 and check site and road conditions at least hourly. The Venue Manager will contact the NSW Regional Duty forecaster at the Bureau of Meteorology at least twice daily for a more detailed interpretation of forecasts. The Venue Manager will provide hourly updates to the Event Producer or if the situation changes.

(ssss) Communication with Staff and Suppliers

The Event Producer will advise all event management personnel that it is not possible to leave the site. This information will be communicated to the Security Manager, site and production managers, staffing co-ordinator, and external site manager These people will be responsible for communicating the information to their relevant staff members for each of the areas.

Everyone will make their way to the Flood Emergency Assembly Area. It is most unlikely this will be necessary during bump out because the number of vehicles and people involved means that there should be sufficient time to evacuate the site, particularly since there will be many trucks amongst these vehicles which can drive through deeper floodwater than can a car.

Table 11. Red Alert Thresholds by Event Phase

Forecast/Observation	**Bump in**	**During Week Before**	**Day Before**	**Day 1 or 2**	**Final Day**	**Bump Out**
Flood warnings	Directive from SES	Directive from SES	Directive from SES	Directive from SES	Directive from SES	Directive from SES
Stream gauge readings	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >3.0m	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.3m
Water on site	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.	Within 200mm of lower parts of spine road.
External Roads	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached	North and South routes cut and Orange Alert threshold reached

10. Management Actions – Black Alert - Cancellation

The following are the specific actions which will be taken should any one of the thresholds in Table 7 be exceeded for escalation to Black Alert – Cancellation or the Event Producer escalates to Black Alert in light of other information.

The thresholds for Black Alert are repeated in Table 12 for each phase of an event. They do not apply in bump out and because a cancellation decision is unlikely to be made more than a week out from the event, bump in has not been given a separate set of thresholds.

The cancellation decision will be made by the Event Producer in consultation with the Venue Manager and the SES. The SES may direct that an event be cancelled because of flood risks.

When a cancellation decision has been made the actions which are taken are similar irrespective of which phase of the event that decision has been made.

Most revolve around communicating the decision to the relevant people.

(tttt) Communication with Staff

Using the communication methods listed in Section 4.5, the Event Producer will advise all event management personnel that the event has been cancelled and remind them of the steps to be undertaken in these circumstances.

This information will be communicated to the Security Manager, site and production managers, camping managers, food and market manager, bar manager, visual arts manager, staffing co-ordinator, external site manager and publicist.

These people will be responsible for communicating the information to their relevant staff members for each of the areas and ensuring that all cancelation tasks are completed.

(uuuu) Communication with Suppliers

All suppliers will be advised that the event has been cancelled. Deliveries will cease and those things which have been delivered to site which can be taken back by the suppliers will be taken back. Any event infrastructure which has been assembled will be dismantled and removed.

(vvvv) Communication with Artists

Artists will be advised by the Event Producer that the Event has been cancelled.

(wwww) Communication with Patrons

a) Patrons off Site

Patrons off site will be informed of the event cancellation because of flood risk using the communication methods listed in Section 4.5.

A media release will be issued and publicist will be available for radio interviews. Electronic message boards which are located on the roads 20km either side of the event will be used to advise travellers of the cancellation.

b) Patrons arriving at Site

Any patrons who arrive at the site will be advised that the event has been cancelled.

c) Patrons already on Site

The traffic marshals, security personnel and camp marshals will advise patrons that the event has been cancelled and that they are to leave the site immediately. This message will also be communicated using the methods listed in Section 4.5.

The site public address system, large video screens and variable message signage around the site will be used to communicate this message and instructions to patrons. It will include the standard SES advice not to walk, drive or ride through floodwaters.

Table 12. Black Alert Thresholds by Event Phase

Forecast/Observation	During Week Before	Day Before	Day 1 or 2	Final Day
4 Days forecast	>500mm including the event days	NA	NA	NA
24 hour forecast	NA	> 400mm	300mm	NA
Flood warnings	Directive from SES	Directive from SES	Directive from SES	Directive from SES
Fallen rain in 24 hours	NA	> 300mm	250mm rain	250mm rain
Stream gauge readings	NA	Northern Drain >3.5m Yelgun (Marshalls) Creek >4.5m	Northern Drain >2.5m Yelgun (Marshalls) Creek >4.5m	Northern Drain >2.5m Yelgun (Marshalls) Creek >4.5m
Water on Site	NA	More than 300mm depth in areas being used	More than 300mm depth in areas being used	More than 300mm depth in areas being used

11. Management Actions – After Flooding

Recovery Strategies

(xxxx) Immediately after the Flood

After a flood, the following steps will be taken.

a) Patrons who have remained on site

1. If their vehicles are loaded and can be driven off site they will be directed to do so immediately
2. If their vehicles are loaded but cannot be immediately driven off site they will be given assistance (towing, roadside assistance) to get the vehicle off site
3. If they have possessions other than motor vehicles which they wish to retrieve from the flood affected area they will be given one hour to do so after the area has been assessed by the Venue Manager as being clear of floodwaters and other hazards
4. If they have motor vehicles which have flooded they will be permitted to remove any possession from the vehicle in accordance with 3 above. Their details and the vehicle details will be recorded by the event Security Manager and arrangements made for the removal of all such vehicles by a transport contractor to a designated holding yard for later collection
5. Any person who does not have transport to leave the site will be bussed to a transport hub (airport, railway station or bus station) of the Event Producer's choosing and the cost of transport to a point from which the patron has transport will be borne by the Event.

b) Artists who have remained on site

1. Artists will be permitted to collect any equipment which they have on site and will be asked to leave the site as soon as possible if they have transport.
2. If they do not have transport then the Event Producer will provide them suitable transport appropriate to their needs.
3. If their vehicle cannot be driven from site the same arrangements will be made as for patron's vehicles

c) Staff and suppliers who have remained on site

1. Staff who have remained on site will first be asked to assist patrons and artists leave the site as soon as possible
2. Any staff who need to leave and have vehicles which can be driven from the site will do so
3. If their vehicle cannot be driven from site the same arrangements will be made as for patron's vehicles

(yyyy) Clean Up

As soon as possible after a flood, staff and contractors will be engaged to clean up the site. A hazard assessment will be undertaken, safe work methods statements prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods:

- Slips, trips and falls
- Sharp debris
- Venomous animals
- Contaminated water and sediments

Review and Evaluation

After the site has been cleaned up following a flood, or after any flood alert has been raised even if a flood has not eventuated, a debrief will be held and will involve as a minimum the Venue Manager, the Event Producer and the SES Local Controller but may include others as deemed necessary.

The event and flood response, including the use of this Plan and the Event Flood Plan, will be reviewed. Changes will be made to the Plan and the requirements for Event Plans should the review identify any improvements which can be made.

12.Management Actions Summary

Table 13. Summary of management actions

Event Stage	Trigger	What	How	Who	Resources
Before and During an Event	Always	New Stream Gauges	Parklands to install and link to existing monitoring system	Venue Manager and owners	Stream gauges and on-going maintenance
		Emergency Contact Details	Review and update, send to event producer and local SES	Event Producer	Name and Contact details
		Planning and Layout	Site event areas planning and set up, resources checks	Venue Manager and Event Producers	Site diagrams
	At Induction	Training	For permanent parklands staff and temporary event staff	Venue Manager and Event Producers	Written procedures and information
	From one week before bump in to end of event	Forecast monitoring	Monitor websites listed in Section 0 and make observations daily	Venue Manager	internet access
	From one month before bump in to end of bump out	Communication with SES	Advise SES of event details	Event Producer	Phone, copy of event flood management plan and contact details
	From one week before bump in to end of bump out	Communication with Event Producer	Consult with Event Producer on weather conditions and alert levels	Venue Manager	Contact details
		Communication with staff, artists and suppliers	Advise staff of alert levels and changes	Event Producer	Contact details and chain of command
	Ticket purchase	Communication with patrons	Online or hard copy information provided during purchase	Event Producer	Information resources and details

	Change in Flood Alert	Communication with patrons	Via emails, event website, social networks, media releases and SMS	Event Producer	Contact lists for patrons, phone, computer and internet access
Bump In	Blue Alert – Flood Watch	Forecast Monitoring	Increase monitoring to hourly	Venue Manager	Computer and internet access
		Event Modification	Consider necessary modifications to reduce risk	Event Producer	Site diagrams
		Communication with staff	Advise of flooding possibility and steps to be taken	Event Producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with suppliers	Advise of flooding possibility and any changes and request contingency plans	Event Producer	Contact lists
		Communication with artists	Advise of flooding possibility and steps to be taken	Event Producer	Contact lists
During week before event	Blue Alert – Flood Watch	Communication with patrons	Flood information stickers to be distributed, designated driver advice issued	Event producer and event staff	Flood stickers and distribution means
Day before the event	Blue Alert – Flood Watch	Communication with patrons	Off site through emails, event website, social networks, media releases and SMS On site with flood information stickers and camp marshals	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information
		Communications with artists	Advise of flooding possibility and steps to be taken	Event producer	Contact lists
	Blue Alert – Flood Watch	Forecast Monitoring	Increase monitoring to hourly	Venue manager	Computer and internet access

During the Event		Event modification	Consider necessary modifications to reduce risk	Event producer	Site diagrams
		Communication with staff	Advise of flooding possibility and steps to be taken	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with suppliers	Advise of flooding possibility and any changes	Event producer	Contact lists
		Communication with artists	Advise of flooding possibility and steps to be taken	Event producer	Contact lists
		Communication with patrons	Off site through emails, event website, social networks, media releases and SMS On site with flood information stickers and camp marshals	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information
Bump Out	Blue Alert – Flood Watch	Forecast Monitoring	Increase monitoring to hourly	Venue manager	Computer and internet access
		Communication with staff	Advise of flooding possibility and steps to be taken	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with suppliers	Advise of flooding possibility and any changes and request contingency plans	Event producer	Contact lists
Bump In	Yellow Alert – Flood Warning	Forecast Monitoring	Increase monitoring to continually	Venue manager	Computer and internet access
		Event Modification	Consider necessary modifications to reduce risk	Event producer	Site diagrams

		Communication with staff	Advise of flooding possibility and steps to be taken	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with suppliers	Advise of flooding possibility and any changes and request contingency plans	Event producer	Contact lists
		Communication with artists	Advise of flooding possibility and steps to be taken	Event producer	Contact lists
During week before event	Yellow Alert – Flood Warning	Serving of alcohol	Cease serving alcohol	Event producer and bar staff	Contacts and bar closure signs
		Communication with patrons	Off site through emails, event website, social networks, media releases and SMS Arriving patrons through stickers and tent set up prevention On site with flood information stickers and camp marshals	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information.
		Communication with artists	Advise of flooding possibility and steps to be taken	Event producer	Contact lists
Day before the event	Yellow Alert – Flood Warning	Communicate with patrons	Off site through emails, event website, social networks, media releases and SMS Arriving patrons through stickers and tent set up prevention On site with flood information stickers and camp marshals	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information.

During the event	Yellow Alert – Flood Warning	Forecast monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff	Advise of flooding possibility and steps to be taken	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Event modification	Consider if events need to cease or be modified to reduce risk. Consider escalating alert level.	Event producer and venue manager	Site diagrams, forecast information
		Serving of alcohol	Cease serving alcohol	Event producer and bar staff	Contacts and bar closure signs
		Relocation or modification of assets	Prepare on-site resources as per 7.4.5	Event producer, venue manager and all venue staff	Site diagrams, movable resources, contact lists
		Communication with suppliers	Advise of flooding possibility and request deliveries cease.	Event producer	Contact lists
		Communication with artists	Advise of flooding possibility and suggest equipment pack ups	Event produced	Contact lists and flood management actions
		Communication with patrons	Off site through emails, event website, social networks, media releases and SMS – advise temporary closure Arriving patrons asked to leave and return when all clear is issued On site requests to return to vehicles, pack up camp sites	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information. Website information and public address systems.

Bump Out	Yellow Alert – Flood Warning	Forecast Monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff and suppliers	Advise of flooding possibility and steps to be taken, request contingency plans	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Reschedule activities	Organise a timeline to accelerate removal of flood affected assets as a priority	Event producer	Contact lists and bump-out activities site diagrams
Bump In	Orange Alert - Evacuation	Forecast Monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Event Modification	Consider modification to layout, activities or program to reduce risk, dependant of forecast flood timing	Venue Manager	Site diagrams and forecasts
		Communication with staff	Advise of flooding possibility and steps to be taken	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with suppliers	Advise of flooding possibility and any changes and request contingency plans. Request deliveries cease.	Event producer	Contact lists
		Communication with artists	Advise of flooding possibility and steps to be taken	Event producer	Contact lists
During week before the event	Orange Alert - Evacuation	Communication with patrons	Off site through emails, event website, social networks, media releases and SMS – advise temporary closure	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information. Website information and public address systems.

			Arriving patrons asked to leave and return when all clear is issued On site requests to return to vehicles, and follow instructions to vacate the site		
		Communication with artists	Advise of flooding possibility and request they leave the site	Event producer	Contact lists
During the event	Orange Alert - Evacuation	Forecast monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff	Advise of flooding possibility and steps to be taken to evacuate premises	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with patrons	Off site through emails, event website, social networks, media releases and SMS – advise temporary closure Arriving patrons asked to leave and return when all clear is issued On site requests to return to vehicles, and follow instructions to vacate the site	Event producer and event staff including camp marshals	Flood stickers and distribution means, appropriate signage and information. Website information and public address systems.
		Directing of vehicles	Vehicle staff to direct vehicles out of site on pre-determined access tracks	Camp marshals and traffic management staff	Evacuation route diagrams and tow trucks in case of bogging
		Communication with suppliers	Advise suppliers to cease deliveries until further notice	Event producer	Contact lists

		Communication with artists	Advise artists to leave the site following staff instructions	Event producer	Contact lists and evacuation routes
Bump Out	Orange Alert - Evacuation	Forecast Monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff and suppliers	Advise all staff to leave the site and suppliers to cease deliveries until the all clear is given	Event producer	Contact lists
Bump In	Red Alert - Refuge	Forecast monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff	Advise of flooding possibility and steps to be taken to shelter on site	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
During week before event	Red Alert - Refuge	Communication with patrons	Off site through emails, event website, social networks, media releases and SMS – advise temporary closure Arriving patrons asked to leave and return when all clear is issued On site requests to leave vehicles and follow staff instructions to flood emergency evacuation area	Event producer and event staff including camp marshals	Appropriate signage and information. Website information and public address systems.
		Catering at evacuation area	All supplies to already be in place – staff to advise patrons of conditions	Event producer and event staff	Resources on site, management actions to be undertaken
During the event	Red Alert - Refuge	Forecast monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access

		Communication with staff	Advise of flooding possibility and steps to be taken to shelter on site	Event producer and event section managers	Contact lists and chain of command. Flood management actions to be undertaken.
		Communication with patrons	Off site through emails, event website, social networks, media releases and SMS – advise temporary closure Arriving patrons asked to leave and return when all clear is issued On site requests to leave vehicles and follow staff instructions to flood emergency evacuation area Advise not to attempt access to vehicles in the southern car park which would be at risk of high hazard flooding	Event producer and event staff including camp marshals	Appropriate signage and information. Website information and public address systems.
		Catering at evacuation area	All supplies to already be in place – staff to advise patrons of conditions	Event producer and event staff	Resources on site, management actions to be undertaken
Bump Out	Red Alert - Refuge	Forecast monitoring	Monitoring will be increased to continually	Venue Manager	Computer and internet access
		Communication with staff and suppliers	Advise of flooding possibility and steps to be taken to shelter on site. Cease delivery instructions until further notice	Event producer	Contact lists and chain of command. Flood management actions to be undertaken.
Always	Black Alert – Event Cancellation	Communication with staff	Advise staff of cancellation	Event producer and event section managers	Contact lists and chain of command
		Communication with suppliers	Advise suppliers of cancellation of deliveries	Event producer	Contact lists

	[redacted]	Communicate artists	Advise artists of cancellation	Event producer	Contact lists
		Communications with patrons	Off site through emails, event website, social networks, media releases and SMS – advise event cancellation Arriving patrons asked to leave Any on site patrons will be asked to leave immediately	Event producer and event staff including camp marshals	Appropriate signage and information. Website information and contacts.

Table 14. Emergency Contacts List – Venue Plan

Name	**Organisation**	**Role**	**Contact**
Mat Morris		Venue Manager	02 6680 4049 0418 683 746 mat@northbyronparklands.com
	Emergency Services	Fire/ambulance/police	000
Mark Somers	State Emergency Service	SES RTegional Controller	6625 7700 0477 772 850
	Bureau of Meteorology	NSW Duty Forecaster	9296 1555, 9296 1587, 9296 1587
	Byron Shire Council	Flood Engineer	6626 7000
	Byron Shire Council	Roads Engineer	6626 7000
	Byron District Hospital		6685 6200
	Tweed Hospital		07 5536 1133
	My Road Info Help Desk		council@lismore.nsw.gov.au
	Essential Energy Customer Service		13 20 80
Zane Fardon	Venue telecommunications service provider	Internet Continuity	0403 398 272

Table 15: Emergency Contacts List – Event Plan

13.References

Barnes, S. (2010), Medical Emergency Impact Assessment, Emergency First Aid Service Pty Ltd

BMT WBM (2010), Tweed-Byron Coastal Creeks Flood Study, Final Report.

BMT WBM (2015), North Byron Parklands FIA Review, letter to North Byron Parklands reviewing the 2010 BMT WBM Tweed-Byron Coastal Creeks Flood Study.

Connelly, S. (2010), Environmental Assessment – North Byron Parklands: Tweed Valley Way and Jones Road, Yelgun. S J Connelly CPP Pty Ltd

Opper, S. (2004) *The Application of Timelines to Evacuation Planning*, Paper prepared for the Coffs Harbour FMA Conference, 2004.

Parsons Brinkerhoff Australia Pty Ltd, (2011), North Byron Parklands – Traffic Impact Assessment

State Emergency Service (SES) (2006), Byron Shire Local Flood Plan, NSW SES and Byron Shire Council

Worley Parsons, (2011), WaterRIDE V6.09 flood analysis software

Suggested Information Resource Content

Flood Information Resource:

Suggested colour coding system from blue, through green to yellow to red and then white for all clear. The following instructions for each stage could be used:

1. Flood Watch – Blue - Flooding might be a possibility – Ensure you have a designated driver who is capable of driving in 12 hour's time and that you will be able to pack and safely leave.

2. Flood Warning – Yellow – Flooding is expected to occur – Campers immediately pack all gear and stay with your vehicle. Day visitors to return to their vehicles. Public transport patrons to make their way to pick-up locations. Await further instructions.

3. Evacuation – Orange – All patrons to leave the site by vehicle following directions of event staff. Remain on the marked roads. When off-site do not drive through floodwaters.

4. Take Refuge – Red – Flooding is a threat to patrons – If flooding occurs suddenly or prevents complete evacuation of the site you will need to take refuge on the flood free land as directed by event staff and message boards. Leave your vehicle and follow the directions of staff taking only essential clothing, medications and food with you. Walk on designated roads and paths. Do not attempt to move your vehicle. Do not enter floodwaters.

5. All Clear – White – Flooding has ceased – When flooding, or the threat of flooding, has passed an all clear will be given. You may return to your vehicle. The event may continue or may be stopped depending on the circumstances