



Waste Assessment

North Byron Parklands EIS

State Significant Development - SSD 8169

October 2017

Document Check Off and Disclaimer

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Cover Photo: 2017 Splendour in the Grass Festival (SITG), by Max Tischler

Thanks to Max Tischler for contributing 2017 SITG data and photos for this report.

EXECUTIVE SUMMARY

This Waste Assessment has been prepared as part of an Environmental Impact Statement for State Significant Development (SSD) of a Cultural Events Site, at the North Byron Parklands (NBP) estate.

The project elements include the conduct of events with potentially up to 50,000 patrons, including provision of necessary infrastructure works and services for these events, and a proposed conference facility, accommodation units, and ancillary buildings.

Trial events, including the Falls Festival and Splendour in the Grass Festival have been conducted on the site since concept approval was granted on 24 April 2012.

The project is now progressing towards gaining permanent approval. Following lodgment of a Preliminary Environmental Assessment, the Secretary's Environmental Assessment Requirements (SEARs) in respect to the Environmental Impact Statement (EIS) for this SSD were issued by NSW Planning and Environment on the 18 January 2017.

With respect to waste management, the SEARs requires that the EIS must include an assessment of the potential impacts of the proposal, (including cumulative impacts) and develop appropriate measures to avoid, mitigate, manage and/or offset these impacts ... and must address...

Waste – including:

- an assessment of both construction and operational waste that is to include :
 1. identification and classification of waste streams that would be generated at the site in accordance with the Waste Classification Guidelines (EPA, 2014);
 2. a description of waste handling, transport, identification, receipt, processing, stockpiling and quality control;
 3. a description of existing and proposed management and disposal of wastewater and effluent;
 4. details of containment and monitoring of wastewater and waste streams;
 5. the measures that would be implemented to ensure the development is consistent with the aims, objectives and guidelines in the NSW Waste Avoidance and Resource Recovery Strategy 2014-21; and
 6. a description and appraisal of waste and wastewater impact mitigation, contingencies and management.

This Waste Assessment has been prepared to address the management of solid and liquid wastes, other than sewage effluent and acid sulfate soils which have been undertaken by other consultants.

The Assessment entailed two site inspections, interviews, review of documentation, data collection and analysis, and a review of current waste management practices in context with relevant government legislation, policies, guidelines, initiatives, and best practice.

The key findings of this Waste Assessment are as follows:

Management Framework

- NBP has developed and implemented an Environmental Health and Safety Management Manual (EHSMM) based on best practice national and international management systems. The EHSMM includes a Waste Management Standard NBP 014.
- Under the terms of the Concept Approval dated 24 April 2012, as amended, the proponent is obliged under the "Statement of Commitments" to adopt and implement the EHSMM, and with respect to waste management ensure all events be carried out in accordance with "NBP

Standard 014 –Waste Management”. There are also requirements with respect to litter management which are captured under NBP 007 - Off Site Management.

- The NBP Waste Management Standard NBP Standard 014 requires that the event operator shall develop a Waste Management Plan (WMP) for each event that addresses general waste, recycling, and organics in line with the NSW EPA’s Waste Wise Events Guide.
- This Waste Assessment has found that NBP has implemented measures to minimize waste generation, maximize recycling and reuse, and minimize waste to landfill in accordance with the EHSM.
- It is evident that the management systems which have been developed and implemented by NBP, pursuant to the requirements of the Concept Approval, in particular the EHSM and Waste Management Standard NBP Standard 014 have proved to be effective in delivering sustainable event waste management. These systems provide a robust framework for sustainable waste management for future events as proposed in this SSD.

Event Waste Management

- Waste Management Standard NBP 014 and Occupation Agreement conditions require that event operators submit to the General Manager of NBP, prior the commencement of each event, an event diagram showing waste and recycling bin locations and types (i.e. skip bins, compactors, etc.);
- For the 2017 SITG, a total of 1267 bins of various sizes were placed in strategic locations around the site. More than half the bins provided were for recyclables and food organics and garden organics (FOGO). The total volume of these bins amounted to 441 cubic metres. Emptying of bins across the site was continuous averaging twice daily.
- Waste storage and servicing arrangements will need to be adjusted commensurate with increased potential patron numbers of up to 50,000. This adjustment would be easily accommodated on this large site.
- The arrangements that have evolved demonstrate strong commitment, in line with the NSW WARR Strategy, to maximise recovery of event waste resources for beneficial use and reduce diversion of waste to landfill.
- The imminent commencement of the NSW container deposit scheme will introduce monetary incentives to recover eligible beverage containers from the waste stream. This will open up opportunities for Parklands event operators to better encourage patrons to source separate and reduce litter.
- Despite the comprehensive measures to encourage campers to remove camping equipment and provisions upon leaving the site, this issue has proved to be problematic. This problem is not unique to NBP events. This will require ongoing investigation and continuous improvement, drawing upon evolving international best practice.
- Despite behavioural recycling, reuse and clean up challenges, management of waste has been undertaken effectively by event operators with the site being entirely cleaned of discarded patron waste within a week of the conclusion of each event.

Event waste characterisation and quantification

- Event waste for the 2017 SITG amounted to around 253 tonnes and is predicted to rise to 390 tonnes with potentially 50,000 patrons as proposed in this SSD.
- The event waste stream from the Parklands site comprises almost entirely of general solid waste (non-putrescible) and general solid waste (putrescible) respectively. Small quantities of Special Waste (Clinical) and some hazardous wastes such as paints, HID lamps and gas canisters.
- The resource recovery rate for the 2017 SITG amounted to 14% of the waste stream.

- Around 59% of waste (excluding recyclables) that is destined to be landfilled, is generated in the camp grounds.
- NBP and event managers have gone to great lengths to encourage waste minimisation, and maximise reuse and recycling. However there are opportunities to improve the overall landfill diversion figures for future events through continuous improvement including measures to reduce camp ground waste generation, better efficiency of resource recovery from the waste stream, and further measures to enhance patron festival recycling behaviour

Construction Waste Minimisation Plan

- A Construction Waste Management Plan has been prepared for this development under Part 12 of this Assessment, which has been developed in accordance with NSW EPA Guidelines and the Byron Shire Development Control Plan (DCP) Waste Chapter 2014
- The proposed building construction and civil works will likely generate around 183 tonnes of waste materials, excluding clean fill which will be reused on site. Of this around 67% of the waste stream will be reused or recycled.

Ongoing operation of the conference facility, accommodation and ancillary buildings.

- All waste and recyclables from these buildings, excluding the event Gold Bar, is to be directed to a central waste storage room. This assessment has found that a room area of 18.4 m2 will provide adequate space to store waste and recycling receptacles and provide sufficient space for manoeuvrability.
- This Assessment specifies the design standards for the waste storage room, compaction vehicle access and egress requirements and ongoing management issues to support sustainable waste management in the long term.
- The architectural drawings which form part of this SSD Application reflect these waste management requirements.

Transport and Destination of Waste Materials

- Transport contractors and destinations of waste materials are identified. However as noted in this Assessment, these may change based on prevailing laws, commercial considerations, availability of transport contractors, and new or updated waste processing facilities and landfills. The overriding caveat being that all waste collection, and transport to waste facilities shall be conducted in accordance with relevant statutes.

CONCLUSION

In summary, it is considered that:

- 1. The current NBP management framework, in particular the Environmental Health and Safety Management Manual, that has evolved and which has been implemented is both rigorous and comprehensive and serves as a sound foundation for ongoing sustainable waste management at future larger events, as proposed in this SSD.**
- 2. Implementation of the measures contained in this Waste Assessment will minimise construction waste and promote sustainable waste management at the NBP site, consistent with the NSW Waste Avoidance and Resource Recovery Strategy and relevant statutes, policies and guidelines.**

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PART 1 INTRODUCTION

This Waste Assessment has been prepared as part of an Environmental Impact Statement for State Significant Development of a Cultural Events Site, at the North Byron Parklands (NBP) estate.

NBP is a registered business name held by Billinudgel Property Pty Ltd.

Approval was granted to Billinudgel Property Pty Ltd for a cultural events concept plan by the NSW Planning and Assessment Commission on 24 April 2012, pursuant to section 75O of the Environmental Planning and Assessment Act 1979.

The site is located at 126 Tweed Valley Way, Yelgun as shown in Figure 1.

A more detailed map of the subject site is shown in Figure 2.

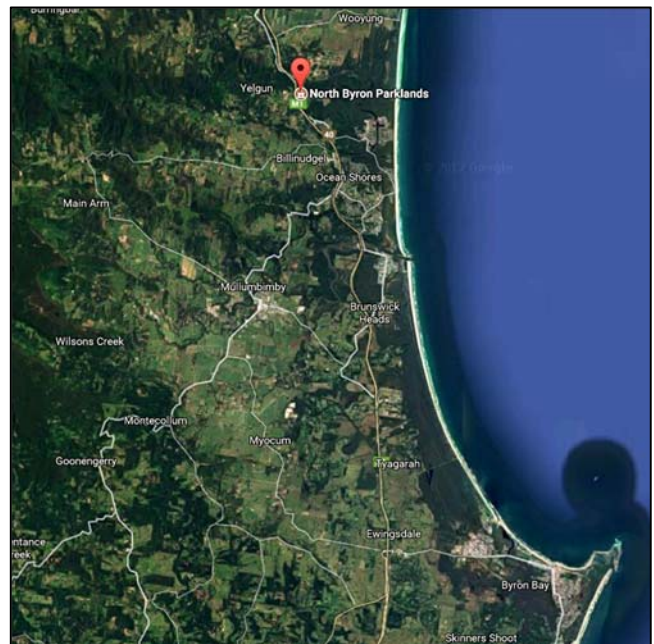


Figure 1 NBP Aerial Map 1 - (Source Google Map)

The approval was granted for a trial which allowed for the following events each year up until the 31st of December 2017:

- Large event trials starting at 25,000 patrons leading up to 35,000 patrons
- Medium event trials commencing at 15,000 patrons leading up to 25,000 patrons;
- Small event trials commencing at 10,000 patrons leading up to 15,000 patrons

Events include Splendour in the Grass (large event), the Falls Festival Byron Bay (medium event) and a third event is yet to be confirmed.

The project is progressing with a Preliminary Environmental Assessment being lodged with NSW Planning & Environment in December 2016 for permanent use of the NBP site as a cultural events site for up to 50,000 patrons.

Pursuant to Section 13, Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011, the development has been determined to constitute State Significant Development (SSD8169), being a development of a cultural events site that has a capital investment value of more than \$30 million.

The Secretary's Environmental Assessment Requirements (SEARs) in respect to the EIS for this State Significant Development were issued by NSW Planning and Environment on the 18 January 2017.

The SEARs specifies requirements with respect to waste management which shall be addressed in the EIS. This Waste Assessment report responds to those requirements.

PART 2 SCOPE OF THIS WASTE ASSESSMENT

This waste assessment has been prepared by Impact Environmental Consultants Pty Ltd to address the requirements of the SEARs in respect to management waste.

The SEARs identifies that the EIS must include an assessment of the potential impacts of the proposal, (including cumulative impacts) and develop appropriate measures to avoid, mitigate, manage and/or offset these impacts ... and must address...

Waste – including:

- an assessment of both construction and operational waste that is to include :
 1. identification and classification of waste streams that would be generated at the site in accordance with the Waste Classification Guidelines (EPA, 2014);
 2. a description of waste handling, transport, identification, receipt, processing, stockpiling and quality control;
 3. a description of existing and proposed management and disposal of wastewater and effluent;
 4. details of containment and monitoring of wastewater and waste streams;
 5. the measures that would be implemented to ensure the development is consistent with the aims, objectives and guidelines in the NSW Waste Avoidance and Resource Recovery Strategy 2014-21; and
 6. a description and appraisal of waste and wastewater impact mitigation, contingencies and management.

This assessment addresses solid and liquid wastes, other than sewage effluent (and related biosolids and grease trap waste) and acid sulfate soils.

Management of sewage effluent and related wastes has been dealt with in a separate assessment by Whitehead and Associates – Environmental Consultants. The report by Whitehead addresses sewage management including POEO Act and licencing requirements, desludgement/biosolids waste, grease trap waste, pump-out effluent, and NSW Department of Health requirements for composting toilets including the proper maturation of compost and land application.

Assessment of acid sulfate soils have been dealt with in a separate assessment.

PART 3 ASSESSMENT METHODOLOGY

This Waste Assessment has been assembled with the benefit of two site inspections on 30 June and 18 July 2017 and information supplied by Mr Matt Morris, General Manager of NBP, Mr Max Tischler, consulting environmental manager for Splendour in the Grass Pty Ltd, and Steve Connolly of Planners North.

The site inspections coincided with the lead into the major Splendour in the Grass Festival (SIGF) which was held on 21 to 23 of July 2017. This 2017 SIGF was a culmination of trial events staged under the Concept Approval since 2013.

The Concept Approval and staging of trial events since 2013 has allowed waste management issues to be better understood and for practices to evolve to better inform this Waste Assessment, EIS and ultimate determination of the SSD and consent conditions.

As such, this Waste Assessment has primarily focussed on an assessment of the 2017 SIGF, with a patron capacity of 32,500, as a benchmark in respect to event waste management at the Parklands site now and into the future.

The inspection of 18 July allowed for inspection of the waste management facilities which were set up for the SITG Festival. Arrangements were made for assembly of detailed data, issues, photos, and plans in respect to pre-event, during event and post event.

Architectural drawings prepared by Dominic Finlay Jones Architects for the proposed conference facility, accommodation and ancillary buildings were assessed in terms of NSW waste management guidelines and the Byron Shire Development Control Plan, Chapter B8, Waste Minimisation and Management. Further information was sought from the client and architect and minor revision of architectural drawings was undertaken to allow a preparation of a complying SWMMP with supporting drawings for this development.

Because of the scale and complexity of the proposed SSD, Byron Shire Council's standard SWMMP form¹ was considered inadequate and a more detailed SWMMP analysis has been provided in this report.

This Assessment has entailed a review of current waste management practices in context with relevant government legislation, policies, guidelines, initiatives, and best practice.

Information has been assembled in this Assessment to address the SEAR's waste management requirements and to inform determination of the proposed development.

PART 4 THE SITE

The NBP site is located on the NSW far north coast, approximately 22 kilometres north of the Byron Bay town centre and 35 kilometres south of Tweed Heads, in the Byron Shire local government area.

The site currently has a total area of approximately 258 hectares, of which approximately 41% comprises cleared area used for events, and the remainder comprises vegetated areas (and waterbodies) used for biodiversity management.

However the existing site is to be the subject a land swap involving dedication of land to the expansion of the NSW National Parks and Wildlife Service's Billinudgel Nature Reserve. The proposed residual Parklands parcels which constitute the "subject site" for the purposes of this SSD will have a combined area of 229.34 hectares as shown in Figure 2.

For the purposes of the above a separate Development Application for subdivision and boundary adjustment is to be lodged with Byron Shire Council.

The site is well positioned in terms of vehicular access being located directly to the east of the Pacific Highway (M1 Motorway) and Tweed Valley Way, the latter of which provides primary access to the site.

Internal road networks together with temporary event fencing provides for safe movement of waste vehicles on the site.

¹ https://www.byron.nsw.gov.au/files/publications/swmmp_-_pro-forma.pdf

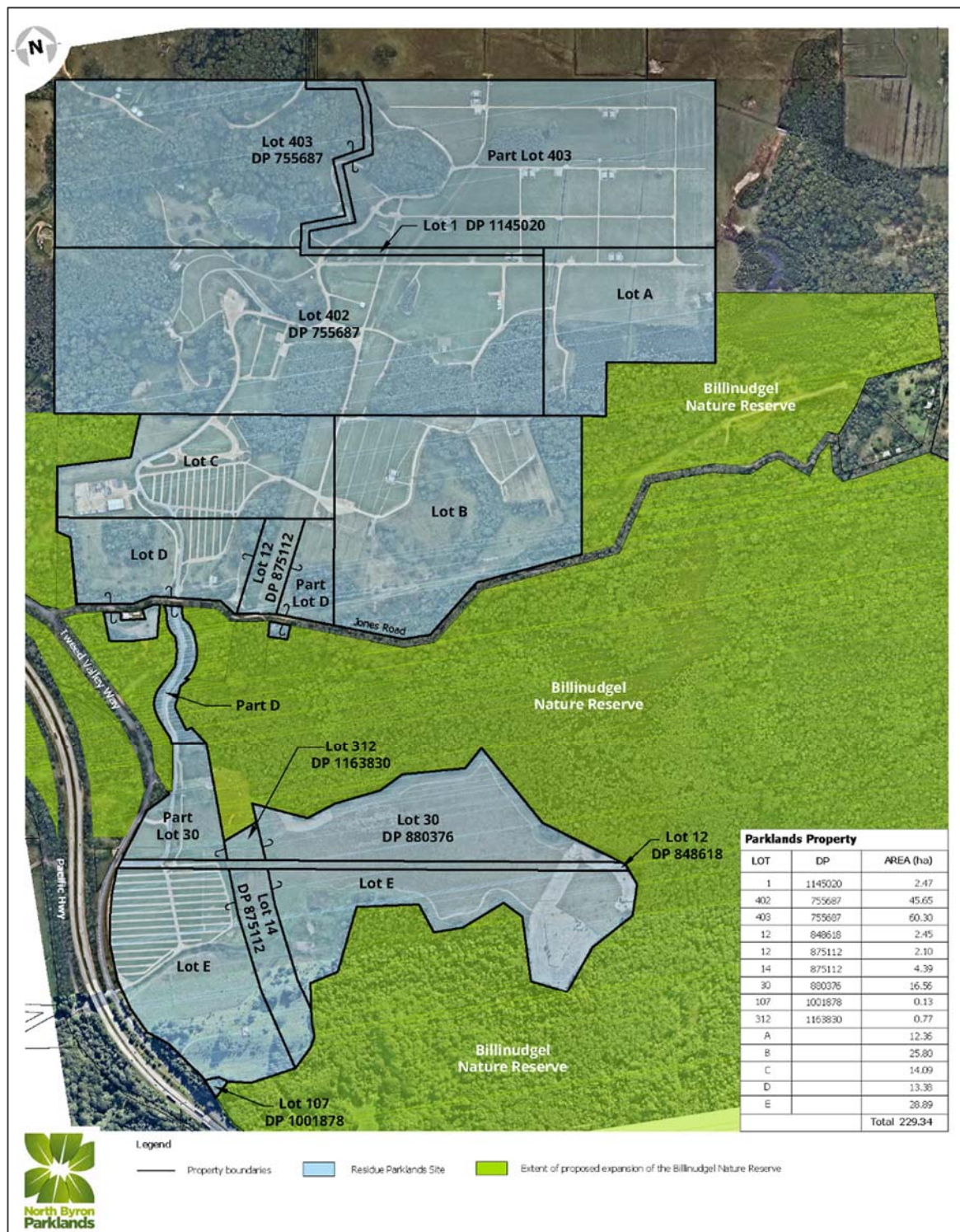


Figure 2 - North Byron Parklands – Subject Site

PART 5 THE PROPOSED DEVELOPMENT

The proposed development for which approval is being sought comprises the use of the site for cultural events with up to 50,000 patrons, temporary event structures, services and the construction of a conference facility, accommodation and ancillary structures.

Approvals are in place for existing structures such as amenities buildings, sheds and services.

The conduct of each event involves the erection and subsequent dismantling of temporary demountable staging, pavilions, stalls for food and market vendors, bars, seating, waste sorting areas, waste and recycling bin banks, walking platforms/board walks, perimeter hessian barrier fencing and supplementary portable toilets. Camping facilities are available on site to allow for over 20,000 campers. The popularity of events at this site has been increasing. Demand for the 2017 SITG well outstripped available tickets.



Figure 3 Photo amphitheatre concert, courtesy of NBP



Figure 4 Photo of market stalls, courtesy of NBP.



Figure 5 Photo of Falls Festival courtesy of NBP

The concept approval and trialling of events since 2013 has allowed the waste management systems, data and practices for these events to evolve so that there is now a solid base of information to inform this Waste Assessment and the EIS.

To date, nine large and medium events have been held as shown in Table 1 below.

Trial Event	Event	Date	Permitted Patrons	Actual Patrons
1st Large	Splendour 2013	Jul-13	25,000	25,000
1st Medium	Falls Festival 2013	Dec 13 - Jan 14	15,000	15,000
2nd Large	Splendour 2014	Jul-14	27,500	27,500
2nd Medium	Falls Festival 2014	Dec 14 - Jan 15	17,500	17,500
3rd Large	Splendour 2015	Jul-15	30,000	30,000
3rd Medium	Falls Festival 2015	Dec 15 - Jan 16	20,000	13,980
4th Large	Splendour 2016	Jul-16	32,500	32,500
4th Medium	Falls Festival 2016	Dec 16 - Jan 17	22,500	22,500
5th Large	Splendour 2017	Jul-17	32,500	32,500

Table 1 NBP large & medium events to date

The proposed event scheme for which development consent is being sought is for permanent approval for:

- 2 events per year (SITG and FFB) up to 35,000 patron & maximum of 5 days each;
- 3 one day events (separate or cumulative) up to 25,000 patrons; and
- 5 community events (separate or cumulative) up to 5,000 patrons,
- Plus 2 minor community events up to 1,500 patrons.

With a further component being:

- Only the SITG event increasing to 42,500 (subject to meeting KPIs for 35k event);
- Only the SITG event reaching 50,000 (subject to meeting KPIs for 42.5k event);

The newly proposed conference related permanent structures comprise:

- a conference facility for functions up to 180 persons, including workshop rooms, offices, dining areas, a café, commercial kitchen, bar and large deck.
- 30 double cabins. (60 accommodation units). Accommodation units are motel style rooms with bathrooms, which will be fully serviced.
- Treatment rooms, parking areas, meditation space, jetties, administration building, Gold Bar and multi-purpose building.

In addition civil construction works are proposed in the event area of the site, including a water treatment facility, effluent management system, internal road works, bus shelter, stage and amphitheatre works, and new amenities buildings.

The conference facility allows for full catering for conference, workshop delegates as well as catering to the accommodation units. Refer to the Concept Drawing in Figure 6 below.

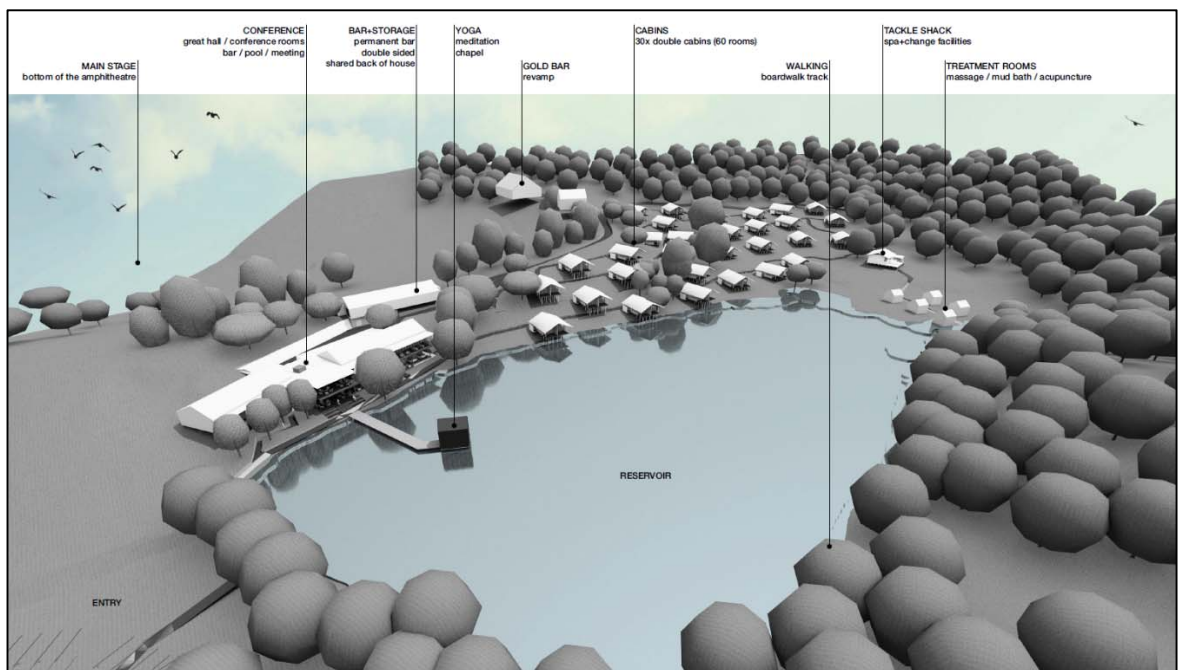


Figure 6 Proposed conference facility and accommodation. Source: NBP 2017

The quantities of waste which are generated on the site will escalate as future event patron numbers are scaled up to potentially 50,000 for annual SITG events, and with the development of the conference centre, accommodation and associated buildings.

PART 6 CURRENT MANAGEMENT ARRANGEMENTS

NBP is a registered business name held by Billinudgel Property Pty Ltd.

NBP owns the site, being the subject of this development application, and provides the necessary permanent infrastructure for the conduct of events by event producers. Occupation Agreements specify the obligations of the parties with respect to events.

Event producers may seek to operate events at the NBP site. For example the premier large scale event, Splendour in the Grass, is operated under that trading name by Splendour in the Grass Pty Ltd, which is a subsidiary of Secret Sounds.

NBP (Parklands) has formally committed to “creating a sustainable world-class cultural events venue within an ecologically enhanced site” and for that purpose has developed an Environmental, Health and Safety Management Manual (EHSMM) to achieve this important objective.



Figure 7 Gate C Entrance NBP 2017

Under the terms of the Concept Approval dated 24 April 2012, as amended, the proponent is obliged under the “Statement of Commitments”² to adopt and implement the EHSMM, and with respect to waste management ensure all events be carried out in accordance with “NBP Standard 014 –Waste Management”

The current version of the EHSMM being Revision 3, was issued 28 September 2016.

The EHSMM includes Standards which document certain actions, risk assessments, plans and/or processes required to be undertaken by event operators in order to successfully host an event at Parklands.

In accordance with Parkland’s conditions of approval (issued by the Planning and Assessment on 24 April 2012), Parkland’s Statement of Commitments and Parklands Environmental Health and Safety Management Manual (EHSMM) it is a requirement that an Event Management Manual (EMM) be provided for event producers and their staff and contractors with specific requirements relating to permissible activities at NBP (Parklands).

The EMM is designed to provide the necessary information and operating parameters that should be referred to when planning and hosting an event at Parklands.

The EMM includes a requirement that an Event Management Plan shall be prepared by the event producer in consultation with Council, OEH, NSW Police, RFS and SES and submitted to the Director-General and Council at least 30 days prior to an event.

The 2017 Splendour in the Grass EMM included the following requirements:

“16.1 Develop a Waste Management Plan (WMP) that addresses general waste, liquid waste, recycling, organics and bump in/bump out waste streams;

² <https://majorprojects.accelo.com/public/47357d2826a5d174c4506c78c279e01f/5.%20Statement%20of%20Commitments.pdf>

16.2 Include in the WMP an event diagram showing waste and recycling bin locations and types (i.e. skip bins, compactors, etc.);

16.3 Include in the WMP details of all waste and recycling contractors used;

16.4 Include in the WMP an event diagram showing the primary sorting and storage area for specific material streams including reusable items, general waste, cardboard, commingled containers and organics;

16.5 Provide details of the front of house waste and recycling system with a view to maximising recycling rates and reducing the generation of general waste.

16.6 Provide details of all waste facilities including license details (if applicable) where general waste, recycling, organics (where applicable) and bump in, bump out waste streams are disposed to;

16.7 At the end of any 'bump out' period, all litter and solid waste is to have been removed from the road reserves of Jones Road and Tweed Valley Way where they adjoin the site;

16.8 Ensure all waste and recycling infrastructure is positioned in a manner to avoid material entering drains and waterways; and

16.9 An appropriately stocked spill kit will be stored at the resource centre for any spills or accidents."

All event operators are obliged under the terms of Occupation Agreements to comply with the EHSMM, EMM, and Standards including the Waste Management Standard (Appendix 1)

The current NBP management framework that has evolved for NBP is both rigorous and comprehensive and serves as a sound foundation for future events, including the management of waste, as proposed in this SSD.

PART 7 ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT MANUAL

The Parkland's EHSMM is based on the following international and national systems:

- AS/NZS ISO 14001 - Environmental Management Systems;
- AS 4804 - Occupational, Health and Safety Management Systems; and
- AS/NZS ISO 20121 - Sustainable Event Management System.

The EHSMM is the primary mechanism for monitoring and measuring the environmental, health and safety performance of events held at Parklands. The EHSMM is a living document that is constantly revised and updated based on a range of inputs including audits, assessments, monitoring and stakeholder feedback.

The key elements of Parkland's EHSMM, covering minor, small, moderate and major events is illustrated in Figure 8.

The core part of the EHSMM is the Environmental Health and Safety Policy which includes a formal commitment:

“Parklands recognises it is responsible for protecting and conserving environmental values across the site whilst also providing a safe and healthy work environment for its employees, contractors, licensees and audience members.

Parklands is committed to developing a world class sustainable events venue through careful planning and management of the activities that take place throughout the year. To meet this commitment we have developed an Environmental, Health and Safety Management Manual to identify, manage and monitor identified risks. As part of this system a number of key objectives have been developed for the site as follows.”

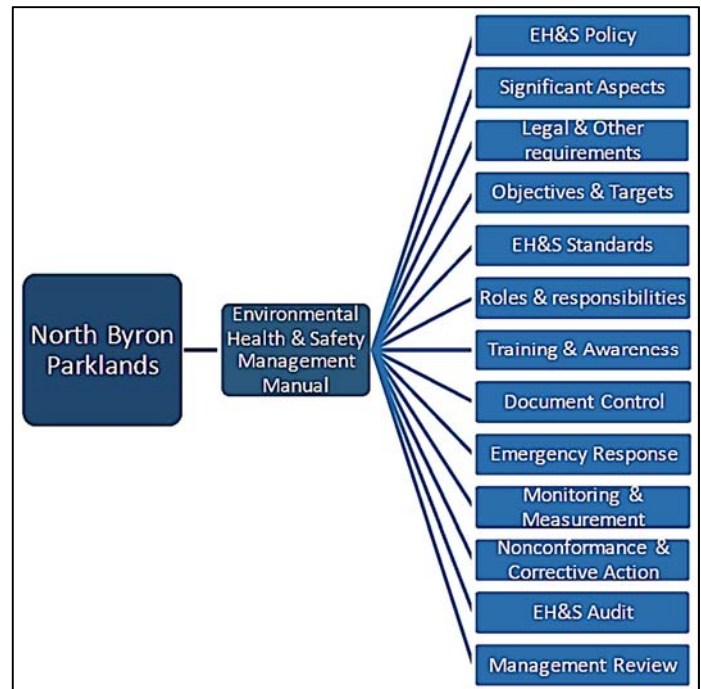


Figure 8 Structure of EHSMM Source: NBP

Of particular relevance to this Waste Assessment is the Waste Management

Standard NBP Standard 01 (refer Appendix 1). The Standard requires, inter alia, that the event operator shall develop a Waste Management Plan (WMP). The WMP must address, inter alia, the waste management requirements listed in the EMM.

In addition, the Offsite Management Standard NBP 007 requires event operators to provide a litter response team for the duration of the event.

The EHSMM and Waste Management Standard NBP 007 cements NBP’s top down commitment to environmental management in accordance with best practice integrated management systems.

PART 8 EVENT WASTE MANAGEMENT PLANS

It is a mandatory requirement that event WMPs be provided to the General Manager of NBP for input and concurrence prior to each event.

The 2017 SITG WMP (Refer Appendix 2) outlines core objectives to:

1. Provide a safe, clean environment for patrons, suppliers and staff,
2. Minimise the environmental impact of the event,
3. Ensure compliance to NBP Event Management Manual and NBP Environmental Health and Safety Management Manual

The WMP described how these objectives will be achieved by implementing “a range of adaptive measures across the three spatial components of the festival - principally external; internal; and camping areas, and throughout the activation period - including site build; event interval; and breakdown.”

"The principal objective is to achieve high rates of diversion from landfill by reducing cross contamination of waste streams and incorporating all suggested strategies from the aforementioned Waste Wise Guidelines, as well as enforcing compliance by contractors."

The 2017 SITG Event Waste Management Plan emphasises that the WMP strategies are in compliance with, and have been adapted from the 2007 NSW Department of Environment and Conservation "Waste Wise Events Guide."

PART 9 RELEVANT WASTE STATUTES, POLICIES & GUIDELINES

9.1 NSW WASTE AVOIDANCE AND RESOURCE RECOVERY ACT 2001

The NSW Waste Avoidance and Resource Recovery (WARR) Act is the framework legislation that provides for the development of a NSW waste strategy, which incorporates the headline targets for waste reduction, resource recovery and the diversion of waste from landfill disposal.

Underpinning the WARR Act is the waste hierarchy which is a set of priorities for the efficient use of resources as summarised below and shown in Figure 9.

1. **avoidance** including action to reduce the amount of waste generated by households, industry and all levels of government
2. **resource recovery** including re-use, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources
3. **disposal** including management of all disposal options in the most environmentally responsible manner.

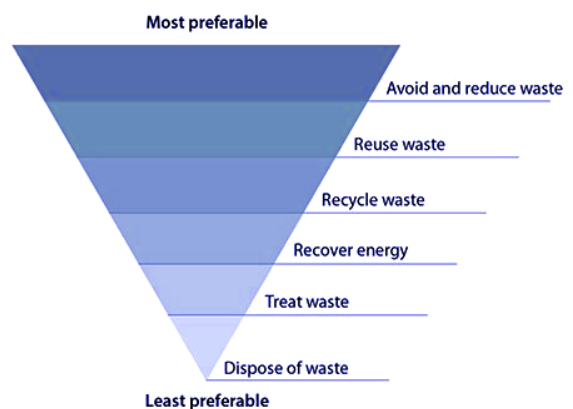


Figure 9 NSW Waste Hierarchy³

A key requirement of the NSW WARR Act is the development, implementation, review and updating of a state wide waste avoidance and resource recovery strategy.

NSW Waste Avoidance and Resource Recovery Strategy

The NSW Government's plan, *NSW 2021: A plan to make NSW number one*, sets ambitious targets to increase recycling and reduce litter and illegal dumping across NSW. These state targets have been embodied in the NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-21 which was released in December 2014⁴.

The WARR Strategy is supported by Waste Less, Recycle More, a NSW Government initiative funded by the Waste Levy, providing \$337million under the current round for waste and recycling improvements across NSW.

³ <http://www.epa.nsw.gov.au/resources/wastestrategy/140876-WARR-strategy-14-21.pdf>

⁴ <http://www.epa.nsw.gov.au/publications/warrlocal/140074-regional-warr-strategy.htm>

The WARR Strategy also sets the direction for other related programs, policies and plans that work to minimise the impact of waste on the environment and human health, including:

- education to encourage behaviour change
- economic mechanisms like the waste levy that encourage resource recovery over landfill disposal
- enforcement of the waste regulations
- incentives to encourage investment, innovation and improvement in environmental practices.

The NSW WARR strategy sets the following targets for 2021–22:

- avoiding and reducing the amount of waste generated per person in NSW
- increasing recycling rates to
 - 70% for municipal solid waste
 - 70% for commercial and industrial waste
 - 80% for construction and demolition waste
 - increasing waste diverted from landfill to 75%
- managing problem wastes better, establishing 86 drop-off facilities and services across NSW
- reducing litter, with 40% fewer items (compared to 2012) by 2017
- combatting illegal dumping, with 30% fewer incidents (compared to 2011) by 2017.

To support the WARR strategy, the NSW Government has refocussed Sect 88 Waste Levy funding on long-term strategic programs under the Waste Less, Recycle More (WLRM) initiative.

Under the WLRM program \$465.7 million was allocated for the 2014-2017 period to drive improved waste management and recycling and investment in critical infrastructure in NSW.

The NSW Government has announced the extension of the WLRM initiative with a further \$337 million over 4 years from 2017-21. This extension guarantees funding from 1 July 2017 until 2021 to continue the work already underway to modernise the waste sector in NSW, deliver waste and recycling services to the community and ensure a clean environment⁵.

The Waste Less, Recycle More funding priorities for 2017-21 are:

- local government waste and resource recovery – \$70 million
- illegal dumping prevention and waste enforcement – \$65 million
- household problem wastes – \$57 million
- waste and recycling infrastructure – \$48 million
- organics infrastructure – \$35.5 million
- litter prevention and enforcement – \$30 million
- business recycling – \$22.5 million
- recycling innovation – \$5 million
- Heads of Asbestos Coordinating Authorities - \$4 million

⁵ <http://www.epa.nsw.gov.au/wastestrategy/waste-less-recycle-more.htm>

As detailed in this Waste Assessment it is evident that Parklands has implemented measures to minimize waste generation, maximize recycling and reuse, and minimize waste to landfill. Measures are in place to limit and deal with littering. The EHSMM sets up a management framework to effect sustainable waste management in accordance with the waste hierarchy.

The WLRM funding could potentially aid Parklands objectives in this regard.

Container Deposit Scheme

A recent amendment to the WARR Act is the inclusion of Part 5 – Container deposit scheme, .

The NSW Government is introducing a refund container deposit scheme (CDS)⁶.

Under the scheme, anyone who returns an empty eligible beverage container to an approved NSW collection depot or reverse vending machine will be eligible for a 10-cent refund. A network of depots and reverse vending machines will open across NSW to receive the empty containers.

The CDS will commence from 1 December 2017.

Features of the scheme

- All NSW beverage containers between 150ml and 3 litres in volume will be eligible for a refund with some exceptions (see Scheme exceptions). These exceptions are similar to the exceptions in the South Australian and Northern Territory container deposit schemes, to aid consistency.
- Beverage suppliers (manufacturer, importer, wholesaler or retailer) that bring eligible containers into NSW will be responsible for funding the refund as well as associated costs.
- It is proposed that the Scheme will be delivered through a two-part structure.
- A single Scheme Coordinator will be responsible for the financial management of the scheme, and for ensuring that the scheme meets its state-wide access and recovery targets.
- Network Operators will set up and run a state-wide network of collection points. They can build and operate these collection points themselves, or they contract for other organisations to do this.
- The Minister for the Environment will appoint the Scheme Coordinator and Network Operators through a competitive selection process.
- Eligible containers in kerbside recycling will be able to be redeemed. The proposed scheme will allow material recovery facilities (MRFs) to use an EPA approved method for accurately estimating the number of containers recovered in the facility and to claim the refund from the Scheme Coordinator. Under this proposed approach, the MRF would only receive the refund amount. They would not be able to claim a handling fee, but they would also not need to separate out containers or substantially change their existing recovery processes. The proposed scheme would also provide a regulatory incentive for MRFs and local governments to share any benefits that may result from these arrangements.

⁶ <http://www.epa.nsw.gov.au/waste/container-deposit-scheme.htm>

Scheme exceptions

Containers that are not included in the scheme and, therefore, do not qualify for a refund include:

- plain milk (or milk substitute) containers
- flavoured milk containers 1 litre or more
- pure fruit or vegetable juice containers 1 litre or more
- glass containers for wine and spirits
- casks (plastic bladders in boxes) for wine and casks for water – 1 litre or more
- sachets for wine 250ml or more
- containers for cordials, concentrated fruit/vegetable juices
- registered health tonics.

Events at the NBP generate large quantities of beverage containers which would be eligible for the 10c refund.

At the time of preparing this waste assessment the final details of the CDS, including the appointed Scheme Coordinator, Network operators and Collection Point Operators were yet to be finalised.

Parklands has indicated it's intention to implement measures to take advantage of the Scheme to minimise littering and improve recycling of eligible beverage containers.

9.2 NSW PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

The *Protection of the Environment Operations* (POEO) Act is the central environmental protection legislation for NSW and is administered by the EPA. The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment.

Pursuant to Section 308 of the Act, a public register is maintained of environment protection licenses, enforcement actions and proceedings.

The principal provisions under the POEO of relevance to Parklands waste management activities are summarised as follows:

Environment protection licences

The activities listed in Schedule 1 to the Act⁷ (broadly, activities with potentially significant environmental impacts) require an Environment Protection Licence (EPL). Licenses are issued in respect of scheduled development work (i.e. development of a site that would require a licence), premises based activities and non-premises based activities.

As demonstrated in this Waste Assessment the storage and sorting of waste generated on the Parklands site, for collection, off-site reuse, recycling and disposal does not require an EPL.

⁷ http://www.austlii.edu.au/au/legis/nsw/consol_act/poteoa1997455/sch1.html

Environment protection offences

The Act has a three tier regime of offences:

Tier 1

Tier 1 offences are the most serious offences and cover certain disposals of waste, leaks, spillages and other escapes, and ozone depleting emissions. Tier 1 offences can be categorised as offences where there is:

- proof of wilfulness or negligence
- harm or likely harm to the environment.

Tier 2

Tier 2 offences consist of all other offences under the Act and regulations, including water pollution, air pollution, land pollution and noise pollution offences. These offences are generally categorised as 'strict liability' offences, that is, the prosecution is not required to prove intent.

Tier 3

Tier 3 offences are not separate offences. They are Tier 2 matters that have been designated in the Regulations as being capable of being dealt with by way of penalty notice.

With respect to waste management at the Parklands site a key requirement is Sect 143 - Unlawful transporting or depositing of waste. Under this provision it is an offence “*If a person transports waste to a place that cannot lawfully be used as a waste facility for that waste, or causes or permits waste to be so transported:*

(a) the person, and

*(b) if the person is not the owner of the waste, the owner,
are each guilty of an offence. “*

Under the Act, “a substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered”.

Waste Management Standard NBP 014 and Occupation Agreement conditions require that event operators submit to the General Manager of NBP, prior the commencement of each event, details of where waste is to be disposed and licence details (if applicable).

Environment protection notices

The Act provides for the issuing of three types of environment protection notices: clean-up, prevention and prohibition notices.

Clean-up notices can be issued to deal with pollution incidents (e.g. a spill of pollutants). Prevention notices can be issued where an activity is being carried out in an environmentally unsatisfactory manner. Clean-up and prevention notices are issued by the regulatory authority for the activity or premises concerned. In emergencies, the EPA can issue a clean-up notice even though it is not the regulatory authority in the circumstances.

A search of the EPA's public register with respect to the Parklands site on 24 July 2017 confirmed that there were no records of POEO Prevention Notices, Clean-Up Notices, Penalty Notices, Prosecutions, civil proceedings, EPLs, nor enforceable undertakings.

Waste Classification Guidelines

The Waste Classification Guidelines⁸ help to classify the types of waste produced by waste generators.

The SEARS specifically requested that the EIS address “*identification and classification of waste streams that would be generated at the site in accordance with the Waste Classification Guidelines (EPA, 2014)*”

The Guidelines comprise four parts:

- Part 1: Classifying waste
- Part 2: Immobilising waste
- Part 3: Waste containing radioactive material
- Part 4: Acid Sulfate Soils

Parts 2, 3 and 4 are not relevant to waste generated on this site under this Waste Assessment. Acid Sulfate Soils and sewage are dealt with by other studies that form part of the EIS for this SSD.

The Part 1 Guidelines⁹ cover the classification of wastes into groups that pose similar risks to the environmental and human health. The relevant classes of waste as defined under clause 49 of the POEO Act being:

- special waste
- liquid waste
- hazardous waste
- restricted solid waste
- general solid waste (putrescible)
- general solid waste (non-putrescible).

The Guideline provides definitions of wastes and procedures methods for determining a waste's classification using chemical assessment by specific contaminant concentration (SCC) and or toxicity characteristics leaching procedure (TCLP).

The Guidelines also refer to procedures for Triple-rinsing to clean containers that have previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies. Containers from which residues have not been removed by washing or vacuuming, are pre-classified as hazardous waste.

As this Waste Assessment report shows the waste stream from the Parklands site comprises almost entirely of general solid waste (non putrescible) and general solid waste (putrescible) respectively. Small quantities of Special Waste (Clinical) and some hazardous wastes such as batteries, solvents, paints, HID lamps, gas canisters, pesticides, and herbicides are generated.

⁸ <http://www.epa.nsw.gov.au/wasteregulation/classify-guidelines.htm>

⁹ <http://www.epa.nsw.gov.au/resources/wasteregulation/140796-classify-waste.pdf>

Resource Recovery Exemptions

The application of waste to land in NSW other than at an approved waste facility may trigger penalties under the PoEO Act and Regulations.

Under the Protection of the Environment Operations (Waste) Regulation 2014 (2014 Waste Regulation), the EPA has the power to grant exemption, where it can be demonstrated that the use of the waste is bona-fide, fit-for-purpose and causes no harm to the environment or human health, rather than a means of waste disposal.

Under the 2014 Waste Regulation, the EPA issues two separate documents: a resource recovery order and a resource recovery exemption.

Resource recovery orders include conditions which generators and processors of waste must meet to supply the waste for land application, use as fuel or in connection with a process of thermal treatment. They may include specifications, record-keeping, reporting and other requirements. All resource recovery orders are made under clause 93 of the 2014 Waste Regulation.

Resource recovery exemptions contain the conditions which consumers must meet to apply waste to land, or use the waste as fuel or in connection with a process of thermal treatment outside certain requirements of the waste regulatory framework. They may include requirements on how to re-use or apply the waste, and record-keeping, reporting and other requirements. All resource recovery exemptions are made under clauses 91 and 92 of the 2014 Waste Regulation.

The EPA exemptions fall into two categories, General Resource Recovery Orders and Exemptions and Specific Orders and Exemptions which may be granted to an applicant in respect to the treating and use of waste in particular circumstances. These Exemptions are available on the EPA's website ¹⁰.

The Exemptions that may be relevant to the NBP development are described in Table 2 below.

Order/Exemption	General Conditions
Mulch exemption & order 2016	The processor must implement procedures to prevent the presence of engineered wood products and / or physical contaminants in the mulch. These procedures must be formally documented and their implementation demonstrated. The mulch must not contain any asbestos, or preservative treated or coated wood residues. The mulch must be applied within 2 weeks of being received.
The excavated natural material exemption & order 2014	The Order specifies the chemical concentration or other attributes that must not be exceeded. The ENM can only be applied to land for the purposes of engineering fill or for earthworks. The exemption specifies testing, processing and handling requirements.
The recovered aggregate exemption & order 2014	The Exemption applies to recovered aggregate comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material. The aggregate must satisfy specified chemical and other material requirements. The product can only be used for certain purposes such as road making, building, construction and landscaping.

Table 2 General Resource Recovery Exemptions & Orders

¹⁰ <http://www.epa.nsw.gov.au/wasteregulation/recovery-exemptions.htm>

9.3 BIOSECURITY ACT 2015 AND REGULATION 2017

It has been the practice of event operators to divert some food waste from event food vendors to a local piggery. This practice is subject to revised controls under the Biosecurity Act 2015 and Regulation 2017 which commenced from 1 July 2017 to prevent livestock from being exposed to exotic disease.

Coinciding with the new legislation, the NSW Department of Primary Industries has updated procedures to manage biosecurity risks in respect to pig feed.¹¹

Under Clause 37 of the Regulation

- (1) A person must not feed stock food to a pig if the stock food contains a mammal product unless the feeding of the mammal product to the pig is otherwise authorised by this clause.
- (8) This clause applies to something that has had direct contact with a mammal product in the same way it applies to the mammal product.
- (7) A person must not supply stock food containing a mammal product to another person knowing or reasonably suspecting that it is to be fed to a pig unless the feeding of the mammal product to a pig is authorised by this clause

Clauses 2 to 5, outline the exceptions to the requirements of Clause (1). The practical effect of the Regulation is summarised as follows¹²:

Food products that are **prohibited** for feeding to pigs:

- pies, sausage rolls, bacon and cheese rolls, pizza, deli meats, table scraps, etc.; and
- household, commercial or industrial waste including restaurant food and discarded cooking oils; and
- anything that has been in contact with prohibited pig feed via collection, storage or transport in contaminated containers (such as meat trays and take-away food containers).

Food products that are **not prohibited** for feeding to pigs:

- milk, milk products and milk by-products either of Australian origin or legally imported into Australia for stock feed use
- eggs
- dry meal made from meat, blood or bone (processed by commercial hot rendering and purchased from a reputable produce store or feed merchant)
- non-meat bakery food substances
- fruit, vegetables and cereals

Parklands event operators have confirmed that strict measures have been put in place to ensure that only permitted food products are supplied to farmer/s for pig feeding.

¹¹ http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/723671/Prohibited-pig-feed.pdf

¹² <https://www.animalhealthaustralia.com.au/what-we-do/biosecurity-services/prohibited-pig-feed-swill-compliance-awareness-project/>

9.4 NSW EPA WASTE WISE EVENTS GUIDE

The Waste Wise Events Guide, 2007¹³ provides advice about how event organisers and venue owners can plan and implement effective waste management and recycling programs for events. The Guide outlines key steps

Before Event: Planning, gaining commitment, promoting a Waste Wise Event, dealing with stallholders and contractors, minimising packaging, planning and managing bin stations.

During the Event: Setting up, monitoring bin usage, communicating the message, on-the-spot evaluation and starting the clean-up.

After the Event: Finishing the clean-up, evaluation and reporting.

Also included are templates, flow charts and clauses for stallholders/vendors.

The NBP' Waste Management Standard NBP Standard 014 requires that the event operator shall develop a Waste Management Plan (WMP) for each event that addresses general waste, recycling, organics in line with the Waste Wise Events Guide. The 2017 Splendour in the Grass Waste Management Plan is contained in Appendix 2.

9.5 GUIDELINES FOR WASTE MANAGEMENT AND RECYCLING IN COMMERCIAL DEVELOPMENTS

The NSW EPA published the Model Waste Not DCP Chapter¹⁴ and Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities¹⁵. These NSW government guidelines were developed by the EPA to promote best practice and have been widely implemented throughout NSW. The Byron Shire Development Control Plan (DCP) Waste Chapter 2014¹⁶ aligns with the NSW EPA guidelines.

The EPA's Model Waste Not DCP includes a requirement, under Sect 1.5.4 State Significant Development/Major Projects, that *"The minimum requirements for such forms of development will be compliance with the aims and objectives of this Chapter"*.

The aims and objectives of the Chapter are:

Aims

To facilitate sustainable waste management within the Local Government Area in a manner consistent with the principles of ESD.

Objectives The objectives in pursuit of sustainable waste management include:

Waste minimisation:

- To minimise resource requirements and construction waste through reuse and recycling and the efficient selection and use of resources.
- To minimise demolition waste by promoting adaptability in building design and focussing upon end of life deconstruction.
- To encourage building designs, construction and demolition techniques in general which minimise waste generation.
- To maximise reuse and recycling of household waste and industrial/commercial waste.

¹³ <http://www.epa.nsw.gov.au/warrlocal/waste-wise-events.htm>

¹⁴ <http://www.epa.nsw.gov.au/resources/warrlocal/080353-model-waste-not-dcp.pdf>

¹⁵ <http://www.epa.nsw.gov.au/resources/managewaste/120960-comm-ind.pdf>

¹⁶ <http://www.byron.nsw.gov.au/publications/development-control-plan-dcp-2014>

Waste management:

- To assist applicants in planning for sustainable waste management, through the preparation of a site waste minimisation and management plan.
- To assist applicants to develop systems for waste management that ensure waste is transported and disposed of in a lawful manner.
- To provide guidance in regards to space, storage, amenity and management of waste management facilities.
- To ensure waste management systems are compatible with collection services.
- To minimise risks associated with waste management at all stages of development.

This Waste Assessment has been prepared to address the above aims and objectives. Included within this Assessment is a Site Waste Minimisation and Management Plan (SWMMP). Architectural plans and drawings for the proposed accommodation, conference centre and ancillary buildings illustrate waste management facilities. A generic plan of waste management provisions for major events is also include in this Assessment.

PART 10 EVENT WASTE MANAGEMENT ARRANGEMENTS

This Part of the Waste Assessment describes event waste management procedures that have evolved and salient findings since the staging of trial events commenced, with a particular focus on the 2017 SITG. This includes the number, capacity and location of event waste bins and collection frequency at the 2017 SITG and for future large scale events. This information serves to demonstrate the capability and competency of NBP to sustainably manage event waste as patron numbers increase to 50,000, as proposed in this SSD.

10.1 WASTE STORAGE AND RESOURCE RECOVERY

In preparation for the 2017 SITG festival, a total of 1267 bins of various sizes were placed in strategic locations around the site. Bin sizes range from 120 litre MGB's to 10 cubic metre hook lift bins as shown in Figure 10 below.

More than half the bins provided are for recyclables and food organics and garden organics (FOGO). The total volume of these bins amounted to 441 cubic metres.

During the event MGBs and cages are serviced no less than twice daily. General waste, FOGO and recyclables are constantly collected throughout the event and transported to the site Recycling Depot.

The Recycling Depot is situated away from patrons where compactor vehicles and hook-lift trucks can safely gain access to transport waste materials to authorised destinations.

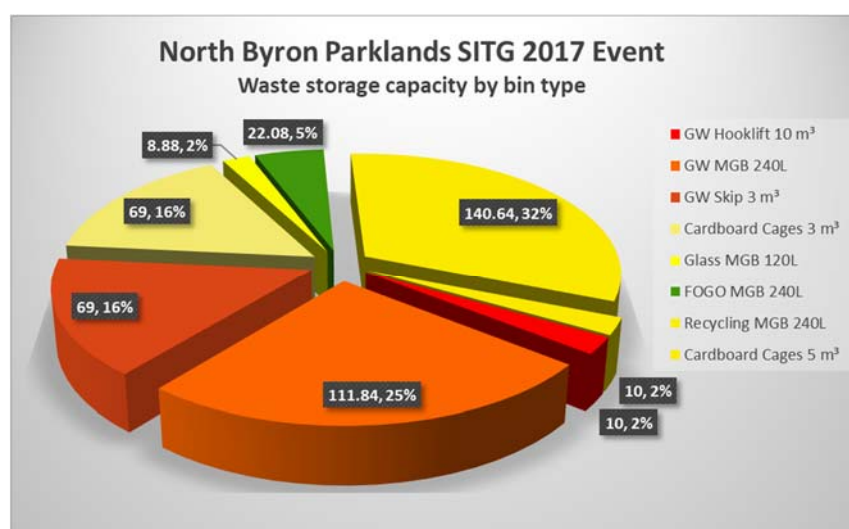


Figure 10 Waste Bins SITG 2017

Figure 12 shows total cubic metre capacity provided for each bin type.

As shown on Figure 11 the bins are provided to activity based areas of the site as follows:

- Amphi Bar Nth including the “Golden View Bar”
- Amphi Bar Sth
- Camping area
- Internal event area
- Back of house area
- External area

Note the event “Golden View Bar” is being upgraded to a larger “Gold Bar” as part of this SSD.

In addition to the above four 3 cubic metre skip bins and 2 hook-lift bins were provided at the site Recycling Depot.

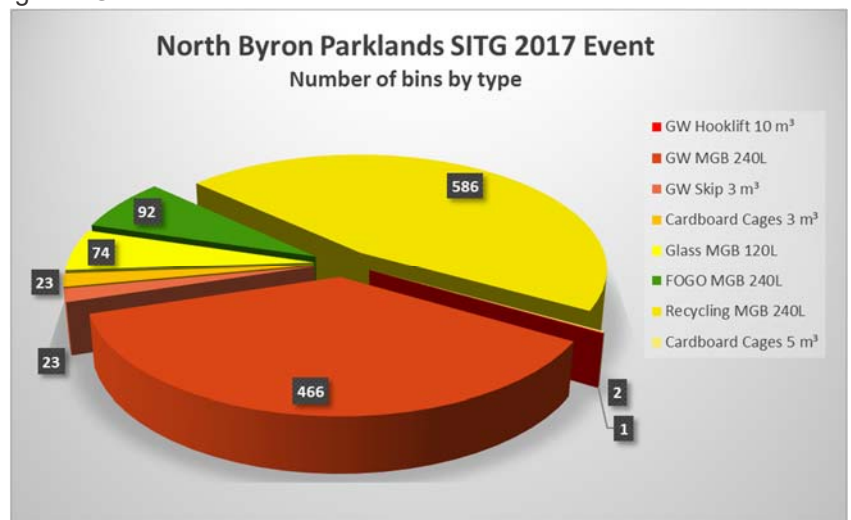


Figure 12 Bin Capacity SITG 2017

Litter patrols were conducted throughout the event, particularly around the site perimeters to prevent off-site migration of litter.

Strict arrangements are followed to minimise health and safety risks associated with the collection and handling of waste at these highly populated events. For example no waste compactor vehicles are permitted in the internal event area.

The waste storage and servicing arrangements will need to be adjusted commensurate with increased patron numbers which are proposed in this SSD. Figure 13 shows the bin capacities provided for the 2017 SITG Festival with 32,500 patrons, and the projected capacity requirements for a 50,000 patron event. There will however be flexibility to adjust service frequencies and bin numbers to achieve optimal waste clearance rates.

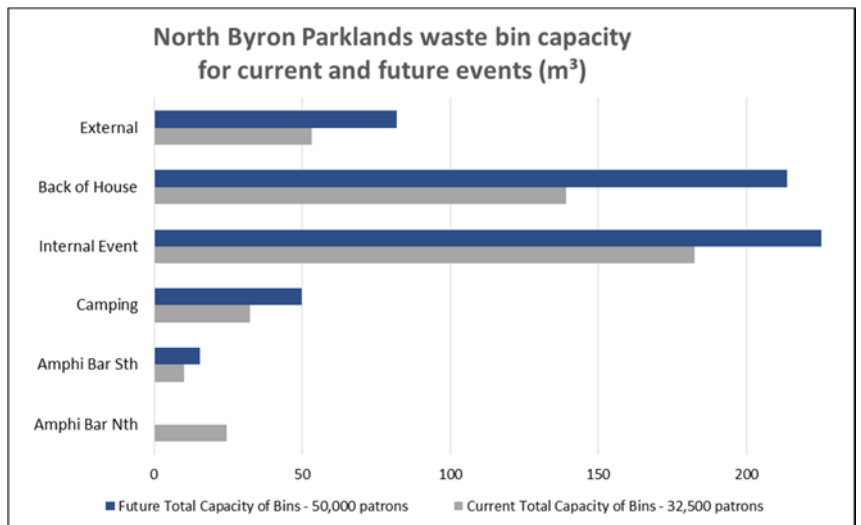


Figure 13 Bin capacity for current & future events

Waste Management Standard NBP 014 and Occupation Agreement conditions require that event operators submit to the General Manager of NBP, prior the commencement of each event, an event diagram showing waste and recycling bin locations and types (i.e. skip bins, compactors, etc.);

Waste storage and servicing arrangements will need to be adjusted commensurate with increased patron numbers of up to 50,000. This adjustment would be easily accommodated on this large site.

10.2 WORKSHOP AND STORAGE AREA

A one hectare area of the NBP site has been set aside as shown in Figure 14¹⁷ below primarily for storage of reuse event materials and equipment. This includes bin pods, fencing materials, pallets, signage and seating that may be reused.



Figure 14 NBP Workshop & Storage



Figure 16 Storage Shed



Figure 15 NBP Hook-lift bin

Materials are kept in the main shed, shipping containers and externally. A 15 cubic metre hook-lift bin is kept in this area for event bump in and bump out waste. The hook-lift bin above contains Falls Festival bump out waste.

Adequate space for reuse materials and waste is available in the workshop and storage area to cope with proposed increasing event patron numbers.

¹⁷ <https://www.google.com.au/maps/place/North+Byron+Parklands/@-28.4748861,153.5150771,512m/data=!3m1!1e3!4m5!3m4!1s0x6b90f458e86fb71b:0xd107ba478b41ddb8!8m2!3d-28.4817672!4d153.5153224>

10.3 THE RECYCLING DEPOT

Mixed waste, recyclables and FOGO is collected using utility vehicles and transported to the Parklands Recycling Depot which is located as shown in Figure 17 below.

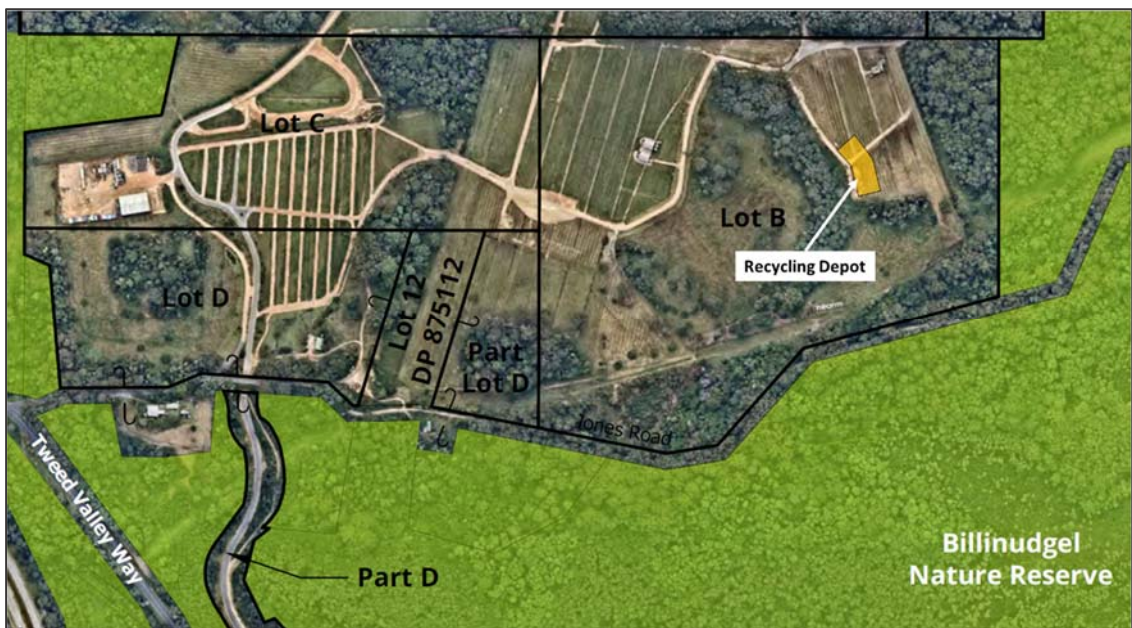


Figure 17 Location of Recycling Depot

The area comprises: temporary shelters for waste sorting, sorting tables, a portable general purpose building, generator, an aluminium can press baler, and a permanent concrete block retaining wall for drop into hook-lift bins. Sorting tables are manned by both volunteers and paid contractors. Numerous bins, bags and cages are on hand to accommodate incoming and outgoing waste streams. Rear load & side lift compactors and hook-lift trucks are on site throughout events to transport waste to designated offsite facilities for processing or disposal. Refer SITG Recycling Depot photos below.



Figure 18 Plastic bags and wrap for recycling



Figure 19 Metal cans ready for press baling

Comingled recyclables are delivered to the sorting area in clear plastic bin liners which are emptied onto the tables. Contaminants which typically exceed 10% of the incoming stream are removed to levels acceptable for the offsite MRF where they will be delivered.

FOGO delivered to the sorting area is also sorted to remove contaminants. A high proportion of this material comprises biodegradable beverage and food packaging.

Clean film plastic including ice bags and pallet wrap is collected for recycling.

Cardboard is collected around the parklands site from cages and in bags and loaded into rear lift compactors for recycling.



Figure 20 Cardboard being loaded into compactor



Figure 21 Press baler & aluminium cans

Despite robust measures to encourage source separation, contamination levels are such that considerable resources are required to sort comingled recyclables and FOGO.

The double handling of recyclables on site to remove excessive contamination before it is transported off-site to a materials recovery facility where further contamination is removed, is a costly operation.

As patron numbers increase to potentially 50,000 for annual STIG events further measures will need to be implemented to enhance efficiency of waste resource recovery, dealing with contamination and increasing waste streams.

The arrangements that have evolved at the Recycling Depot demonstrate strong commitment, in line with the NSW WARR Strategy, to maximise recovery of event waste resources for beneficial use and reduce diversion of waste to landfill.

As is evident from the photos in this report vast numbers of beverage containers are produced at Parklands events.

The imminent commencement of the NSW container deposit scheme will introduce monetary incentives to recover eligible beverage containers from the waste stream. This will open up opportunities for Parklands event operators to better encourage patrons to source separate and reduce litter.



Figure 22 Aluminium Cans

10.4 SOURCE SEPARATION MEASURES

Event operators are obliged to ensure that vendors use recyclable & compostable packaging and products, and are instructed to source separate, using the bins provided. Green Team contractors and volunteers roam the site throughout the event advising patrons, vendors and others on how to source separate and recycle.



Figure 24 Green Team Member giving advice



Figure 23 Back of House waste/recycling facility

The Green Team contractors explain the waste and recycling programs to those that do not understand, answer questions and take on board suggestions.

As has been implemented in past events, 2017 SITG volunteers (Eco-Cops/Waste Warriors) were utilised to educate and incentivise patrons throughout the event. This included an educational hub providing information on the SITG waste management system; judicious schedules for manned waste stations with the internal event, especially those within food vendors and marketplaces and; roaming volunteers offering incentives to patrons, especially within the campgrounds.



Figure 25 Eco Warrior

Campers are provided with clear and black plastic bags and given instructions on their use as shown in Figure 26. These bags are collected from the kerb. Additional bin pods are located around the camping area.

The clear bags enable sorters at the Recycling Depot to quickly identify severely contaminated bags for disposal. The same type of bags are used as bin liners in MGBs.

 CO-MINGLED RECYCLING CLEAR BAGS TO BE CHECKED BY STAFF TO ENSURE VALIDITY.	1. Co-mingled Recycling – this includes most food and beverage containers such as cardboard, plastic bottles, glass jars, aluminium and steel cans. This is the CLEAR coloured bag. This must NOT contain organics (clean recyclables only) NOT ACCEPTED: Food waste, Plastic bags, Nappies, Polystyrene, Waxed paper or cardboard, Ceramics, crockery or cookware, Hazardous material.
 GENERAL WASTE LANDFILL	2. General Waste – this includes mostly everything else. NOT ACCEPTED: Gas Bottles, Regulated waste, Tyres, Liquid Waste, Drums, Heavy Objects, Hot or Smouldering waste, Hazardous material.

Figure 26 Camp bags and MGB liner rules - NBP

Bin liner configuration for Bin Pods is shown in Figure 27 below.



Figure 27 Bin pod liners

Bin pods, each with four 240 litre MGBs are placed around the Parklands site. For the 2017 SITG event new signage was provided to better depict the materials generated at the event which should be placed in the respective bins.

A cigarette pipe disposal bin is attached to each pod as shown in Figure 29 at right.



Figure 29 Bin Pod and new signage



Figure 28 Pig Food Bins 2017 SITG

FOGO waste is primarily transported to the licensed Lismore organics processing facility. However some food waste from food vendor stalls is collected by a local pig farmer. Clearly labelled 240 litre MGBs are provided to receive this food waste in the back of house area as shown in Figure 28 above. As discussed in 9.3 of this report rigorous biosecurity rules apply to this waste stream.

Small quantities of special waste and hazardous wastes are generated at the event. Two yellow lockable clinical waste MGBs are provided to the medical tent. These bins are collected at the conclusion of each event by a licenced contractor and taken to an approved facility for disposal.

Used cooking oil is collected by a contractor for recycling.

Arising during the 2017 SITG event were a number of paint tins, empty fire extinguishers and butane camp cylinders which were segregated and taken by a licenced contractor to an approved facility.

It is evident that, as required by NBP, event operators go to great lengths to encourage source separation of waste materials and diversion of waste from landfill.

10.5 PATRON BEHAVIOUR

Despite the above measures, overall recovery of waste resources has been compromised by festival patron behaviour.

Contamination of recycling and FOGO streams is relatively high as is the proportion of recyclables in the general waste stream. Thus the need for labour intensive sorting on site at the Recycling Depot.

It is the camping area that is most problematic. 133.6 tonnes of general waste, destined to be landfilled, was collected from the camp grounds during and after the 2017 SITG festival. This

accounted for 59% of total general waste for the entire event. In addition, higher contamination levels were found in the camp ground recycling stream.

With the relatively cheap cost of goods many patrons evidently consider it more convenient to simply discard their camping equipment and surplus provisions on site, as shown below. This is despite clear unambiguous advice given to campers to clear the site, reuse, and recycle.

This is a key challenge for large Parklands events and for other similar events worldwide. For example a recent Love Your Tent survey¹⁸, which was compiled in association with the UK's Buckinghamshire New University, of 1200 respondents across a number of countries found that two thirds of respondents (60 per cent) who said they had camped at festivals admitted to discarding their tents at the event.



Figure 30 Discarded camping provisions set aside at the 2017 SITG event

The problem of festival camping waste being left behind at the Parklands site is not unique. A recent survey conducted by Festival Republic¹⁹ showed that 30% of the UK Reading Festival attendees left tents and camping equipment behind, with:

- 79% saying that they were 'too tired' to clear up after the festival***
- 59% viewed tents and camping equipment as 'cheap and easily replaceable' and;***
- 58% of those asked why they left their camping gear said that it was because it was broken.***

Whilst some of the discarded camping equipment and provisions at Parklands is recovered for local charities, most goes to landfill. This is an issue that will require ongoing investigation and continuous improvement, drawing upon evolving international best practice.

Site deposit schemes have been considered but have been evaluated as logistically impractical, in part due to the sheer number of campers wishing to leave quickly after a three day event.

¹⁸ <http://resource.co/resource-use/article/survey-highlights-lasting-waste-damage-festivals>

¹⁹ http://www.powerful-thinking.org.uk/site/wp-content/uploads/The_Show_Must_Go_On_Nov-2015.pdf

However to put all this into perspective, camp ground and event waste including recyclables amounts to around 2.5kg per patron per day which compares favourably with other similar international events.

By comparison in NSW an average of 22.6 kg of waste including recyclables is generated per week at the kerbside per Household²⁰. The average number of people per household in NSW is 2.6²¹, which equates to 1.25 kgs per day per person domestic kerbside, however this figure excludes waste generated by occupants outside the home.

Despite behavioural recycling, reuse and clean up challenges, management of waste has been undertaken effectively by event operators with the site being entirely cleaned of discarded patron waste within a week of the conclusion of each event.

PART 11 EVENT WASTE CHARACTERISATION AND QUANTIFICATION

This Part provides event waste stream data that has been assembled from past events and projections for future larger scale events.

For this Waste Assessment event waste for the past trial events and calculations of future event waste generation have been primarily based on the 2016 and 2017 Splendour In The Grass (SITG) festivals, which each attracted 32,500 patrons. Waste generation rates for these two events

amounted to 252.79 tonnes in 2016 and 261.89 tonnes in 2017.

There was a slight increase in the 2017 total which was attributed to some carry over of inert waste from the previous Falls Festival.

Resource recovery rates for the two events averaged 13.8%. The make-up of the waste stream for the 2017 SITG event is shown in Figure 31.

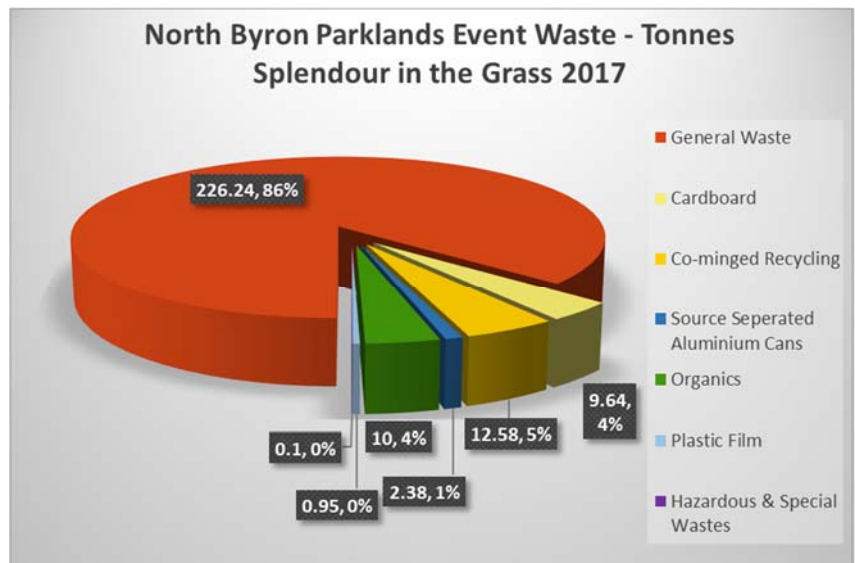


Figure 31 Waste Composition SITG 2017

In terms of the NSW EPA Waste Classification Guidelines, the NBP event waste stream comprises almost entirely of general solid waste (non-putrescible) and general solid waste (putrescible) respectively. Small quantities of Special Waste (Clinical) and some hazardous wastes such as batteries, solvents, paints, HID lamps, gas canisters, pesticides, and herbicides are generated.

²⁰ NSW local government waste and, resource recovery data report 2010-2011, <http://www.epa.nsw.gov.au/resources/warrlocal/120834-lg-data-1011.pdf>

²¹ http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/036

Event waste generation is grouped into four categories according to location and event phase as follows:

1. **Bump-In Waste:** refers to waste that is generated during weeks leading up to the staging of an event. During this period construction waste is generated in connection with the assembly of temporary stages, pavilions, temporary fencing, accommodation tents, walkways and services. Typically around 300 workers will be on site for large events during this period. Waste materials include pallet wrap, pallets, scrap metal, bags, cartons, polystyrene, and other general waste. Some of this waste in particular pallet wrap, timber and metals are recovered, although most is disposed to landfill.
2. **Event Waste:** refers to the waste generated during the event including public areas, internal event areas, pavilions, staging areas, food halls, various festival features, bars, including the “Golden View Bar”, the main amphitheatre, and back of house areas for workers and musicians. Waste generated in this category mainly comprises food waste, beverage containers, disposable paper plates, cups and utensils, and general waste. Around half of this waste stream is recovered as recyclables and FOGO.
3. **Camp Ground Waste:** refers to the waste that is generated by campers during their stay in the camping areas. Each camper is issued with a black bag for general waste bag and a clear bag for recyclables. However the bulk of waste generated is camping equipment and the like which is abandoned by patrons on the site at the conclusion of the event. Only a small proportion of camp ground waste is recovered for reuse and recycling, most being disposed to landfill.
4. **Bump-Out Waste:** refers to the waste generated during the deconstruction of temporary structures such as stages, pavilions, temporary fencing, accommodation tents, and walkways.

As shown in Figure 32 below, around 59% of waste (excluding recyclables) that is destined to be landfilled, is generated in the camp grounds.

While the overall waste recovery rate may seem relatively low, and camping waste excessively high, it is evident that this is primarily attributed to human behaviour at these events.

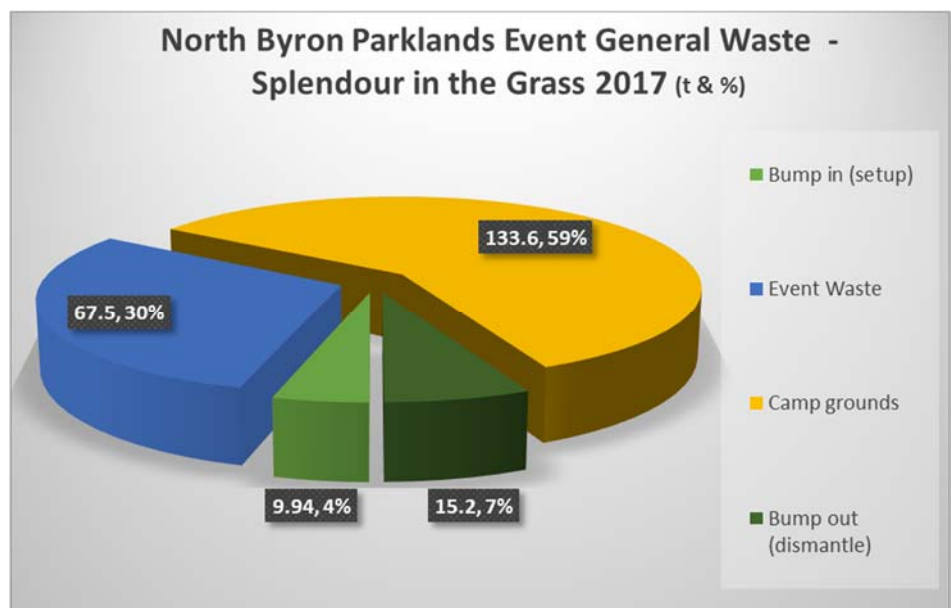


Figure 32 General Waste Sources SITG 2017

Event waste for the 2017 SITG amounted to around 253 tonnes and is predicted to rise to 390 tonnes for 50,000 patrons as proposed in this SSD.

There is some scope to improve overall Parklands festival diversion rates. A 2015 Environmental Impact Report and Vision for the UK Festival Industry²² found that 23,500 tonnes of festival waste was generated annually with 32% being recycled and 68% being landfilled.

NBP and event holders have gone to great lengths to encourage waste minimisation, and maximise reuse and recycling, however there is potential for further improvement to reduce waste to landfill.

Through NBP's documented EMS processes of continuous review and improvement, it is to be expected that waste generation rates (per patron) and waste resource recovery rates will improve.

In this Assessment, waste generation projections for future events has relied on the 2017 SITG event waste data as a benchmark.

Waste generation rates and composition per patron are given in Figure 33.

From this data total projected waste generation for a large scale event has been extrapolated.

Figure 34 shows the current and projected large event waste generation rates.

It should be noted that these projection rates refer the annual STIG event with a maximum potential of 50,000 patrons.

The only other annual large event proposed being the FFB with up to 35,000 patrons.

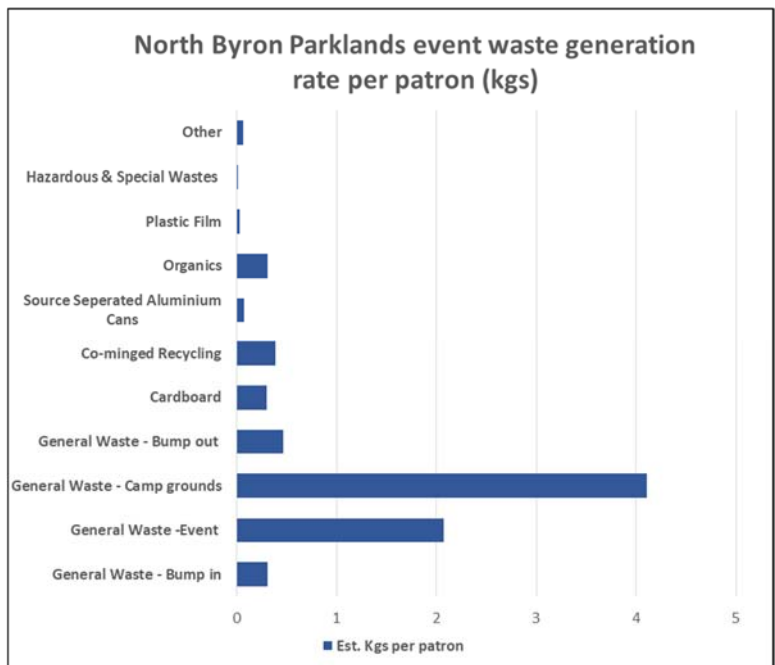


Figure 33 Waste generation per patron

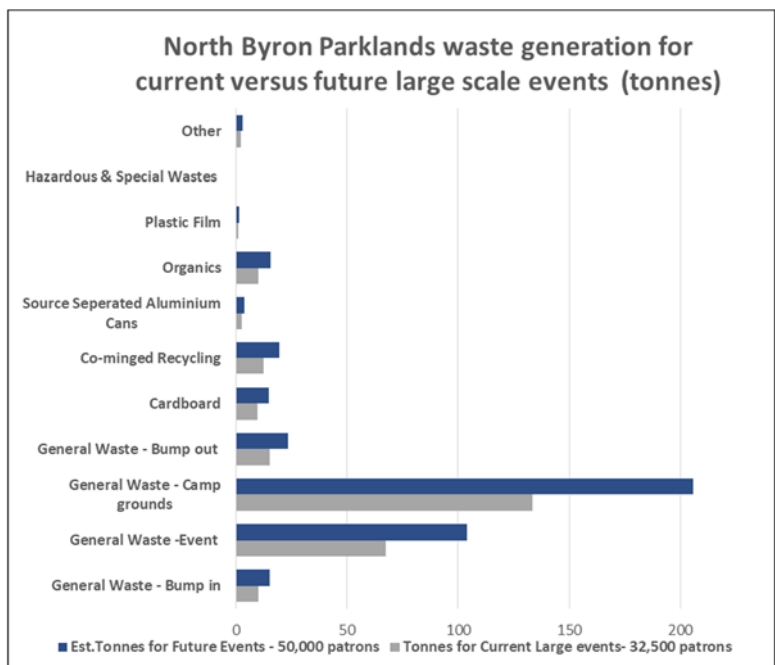


Figure 34 STIG event waste generation current & future

²² http://www.powerful-thinking.org.uk/site/wp-content/uploads/The_Show_Must_Go_On_Nov-2015.pdf

PART 12 CONSTRUCTION WASTE MINIMISATION PLAN

This Part outlines proposed construction works and measures to reduce construction waste going to landfill in accordance with the NSW WARR Strategy which espouses 80% diversion of construction and demolition waste from landfill. A separate demolition waste management plan has not been prepared for this development as only minimal demolition works are required as part of the spa reception building alterations and rebuilding the open “Golden View Bar” structure.

12.1 DESCRIPTION OF BUILDING AND CIVIL WORKS

Table 3 below summarises proposed building construction and civil works, which are shown in the architectural drawings and quantity surveyor’s report²³, with estimated waste generation rates.

PROPOSED BUILDING AND CONSTRUCTION WORKS - NTH BYRON PARKLANDS DEVELOPMENT					
Ref.	Civil Works	Description	Qty	Unit	Est. Waste Tonnes
1	Conference Centre	Conference Rooms, kitchen, dining areas, bar, multifunction hall, administration rooms.	1534	m²	29.13
2	Multi-purpose Hall	Construction of hall, workshop, storage & waste area	435	m²	8.26
3	Conference Cabins	Construct 30 cabins each with 2 accommodation units	2730	m²	58.38
4	Day Spa	Alterations and additions to the former tackle shack	140	m²	2.66
5	Other related buildings	Yoga pavilion, treatment rooms	180	m²	3.42
6	Gold Bar	2 storey Bar with amenities and decks	456	m²	8.66
7	Services	Provision of access roads, paths, services and landscaping to the above		Item	10.00
8	South-East Carpark	Construction of 5,000 car, gravel carpark including earthworks and lighting	162,500	m²	5.00
9	Roundabouts	Public roundabout west of Gate D and also east of Gate C.	2	Item	0.50
10	Southern Pick-up & Drop-off Zone	Construction of transport loop road complete including earthworks, sub-base, basic signage, lighting and the like.	5200	m²	0.20
11	Transport Hub Upgrade	Redevelop existing transport hub zone including bitumen sealing of existing gravel roads, linemarking, signage and the like.	30,500	m²	1.00
		Open bus shelter structure. Basic steel framed and roofed structure including slab on ground and lighting.	500	m²	4.75
11	Gate A Works -Road Improvements	Reconstruct section of the existing Jones Road to allow truck access including drainage.	2100	m²	0.10
12	Amphitheatre Works	Provision for earthworks, terracing, retaining, drainage, regrassing and the like as required.	28,900	m²	2.00
13	Performance Stage Works	Excavation, footings, ground slab, drainage, concrete columns, suspended concrete slab, services	4750	m²	22.55
		Provision for semi permanent stage structures	3	No.	10.00
14	Easy Street Intersection Works	Excavation of existing slope plus construction of a T intersection to council standards including bitumen sealing of existing gravel roads, linemarking, signage and the like.	21,500	m²	0.70
15	Easy Street Seal	Bitumen sealing of existing street road complete including earthworks, sub-base, basic signage and the like.	21,500	m²	0.70
16	Amenities Pods	Supply & install amenity pods . (Prefabricated by Quicksmart Homes)	11	Item	0.10
17	Drainage Works	Excavation and levelling of Amphitheatre area including re-establishment of banks, half round pipe to invert as well as fencing to the adjacent drains.	3,997		0.50
18	Electrical Distribution Works	Implementation of electrical works over approximately 8kms including power poles every 20m, supply and run of electrical cable, pad mount transformers to relative positions.	1	Item	0.50
		Communication enhancements in line with electrical works over approx. 8kms.	1	Item	0.50
19	Lane Rebuilding & Sealing	Widening of lane complete with earthworks, sub-base, basic signage etc.	38,560	m²	1.20
20	Security Fencing	Security fencing 1800mm high with in ground posts every 10m.	4,000	m²	1.00
21	Spine Widening and Sealing	Widening of spine from 6-5m to 8m complete with earthworks, sub-base, basic signage, bitumen seal and the like.	14,400	m²	0.40
22	Bus Stops -Commuter	Open shelter structure 10m x 2m . Basic steel framed and roofed structure including slab on ground, lighting, bench seat and advert panelling.	120	m²	1.14
23	Water Treatment Facility	Grey water tanks, including earthworks, slab on ground, piping to existing facility as well as pumps and all requirements.		Item	
		Kitchen waste water system from all amenities with pipes and pumps.		Item	
		Sewerage reticulation from all amenities to block to existing facility over 10kms including all pumps and requirements.		Item	5.00
		Ancillary infrastructure for the above, including meters, alarms, dosing testing and diagnostics requirements.		Item	
24	Portable Water Works	Water tanks including all earthworks and substructure requirements.	2	Item	
		Connection to council provided mains at Shara Boulevard 3.4km away, including earthworks and installation and commissioning.	3,400		
		Implementation of fire reticulation including hydrants points, header pumps, inspection points and the like over 10km.	10,000		5.00
		Ancillary infrastructure for the above, including meters, alarms, dosing testing and diagnostics requirements.		Item	
	TOTAL				183.36

Table 3 Proposed building & civil works NBP

²³ MitchellBrandtman, NBP Masterplan CIV Estimate, Dec 2017

Estimation of waste generation rates for this Waste Assessment were assembled based on generic waste generation characteristics for this type of mixed development using US EPA data, NSW EPA guidelines²⁴, WALGA guidelines²⁵ together with input from Dominic Finlay Jones Architects and empirical assessments.

Building construction waste for buildings, other than civil works such as road works, excavations and provision of services, have been primarily estimated based on US EPA data²⁶ of 4.38 lb/sq ft for non-residential construction and 3.89 lb/sq ft for residential construction. This equates to 21.29 kgs/m² and to 18.99 kgs/m² respectively. These rates have been discounted for open structures such as staging and the bus shelter. The proposed new amenities buildings will be manufactured off site.

Civil construction waste other than the building works described above have been primarily derived based on empirical assessments for these forms of construction.

The main buildings that will generate waste during the construction phase will be the proposed conference related permanent structures comprising:

- a conference facility for functions up to 180 persons, including workshop rooms, offices, dining areas, a café, commercial kitchen, bar and large deck
- 30 double cabins. (60 accommodation units). Accommodation units are motel style rooms with bathrooms, which will be fully serviced. See Figure 35
- Treatment rooms, parking areas, meditation space, jetties, administration building, and multi-purpose building/bar.
- Gold Bar replacing and upgrading the existing structure.

As an example the floor plan of one of thirty double cabins is shown in Figure 35.

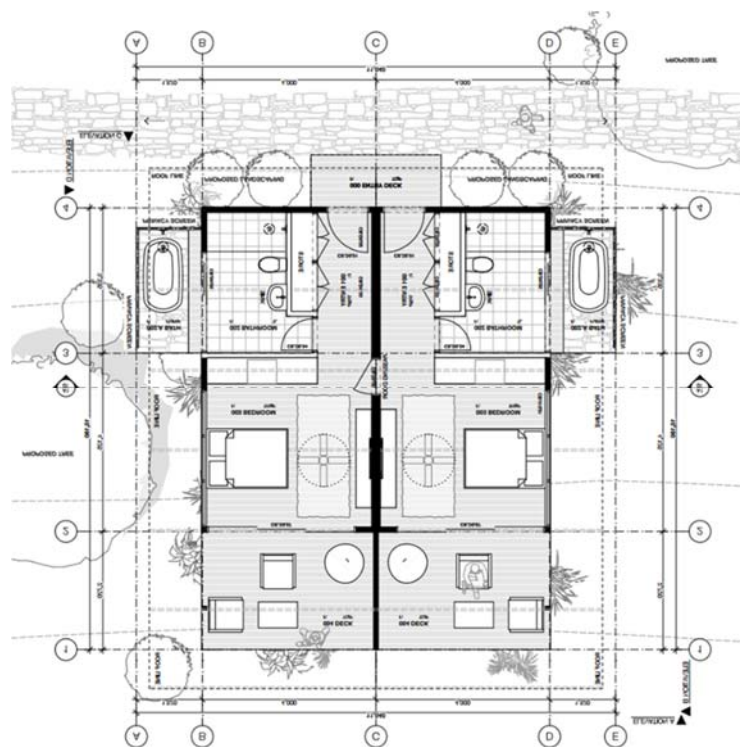


Figure 35 Floor plan of proposed cabins

12.2 CONSTRUCTION WASTE GENERATION, RECOVERY AND DISPOSAL

Around 60% of overall waste will be generated from construction of the conference facility, accommodation and ancillary buildings. The principal construction materials of these buildings will be concrete, concrete block, structural steel, timber, Colourbond roofing and glass as shown in the architectural drawings. Table 4 shows estimated construction waste that would be generated, and reused, recycled and disposed.

²⁴ <http://www.epa.nsw.gov.au/resources/waste/070320-constr-demolition.pdf>

²⁵ http://www.wastenet.net.au/Profiles/wastenet/Assets/ClientData/Document-Centre/WAL2708_Construction_waste_A4_v2_singles.pdf

Table 4 NBP Building & Construction Waste

NORTH BYRON PARKLANDS BUILDING CONSTRUCTION WASTE

Ref.	Type of waste generated	Waste Classification	Reuse (t)	Recycle (t)	Disposal (t)	Estimated Total Tonnes	% Reuse	% Recycle	% Disposal	Est. (%) of total qty	Proposed reuse/recycling/disposal methods
1	Timber	General Solid Waste (non putrescible), Pre-classified as 'wood waste' or 'building and demolition' and by the EPA	22.00	29.34	22.00	73.34	30%	40%	30%	40	Re-use for formwork, and timber framing. Chip untreated timber for landscaping mulch. Balance to landfill.
2	Concrete & aggregates	General Solid Waste (non putrescible), Pre-classified as 'building and demolition waste' by the EPA	17.60	8.80	2.93	29.34	60%	30%	10%	16	Maximise reuse on site. Balance to be transported off site for crushing at approved facility for reuse.
3	Blocks, bricks & pavers	General Solid Waste (non putrescible), Pre-classified as 'building and demolition waste' by the EPA	4.40	5.50	1.10	11.00	40%	50%	10%	6	Clean and reuse on site. Some for retaining wall drainage backfill. Balance to be transported off site for crushing at approved facility for reuse.
4	Tiles (wall & floor)	General Solid Waste (non putrescible)	0.00	0.00	1.83	1.83	0%	0%	100%	1	All to landfill
5	Metals	General Solid Waste (non putrescible), Pre-classified as 'building and demolition waste' by the EPA	0.00	8.25	0.92	9.17	0%	90%	10%	5	Roofing, wall cladding, guttering, down pipes, reo and other metals to be recycled
6	Glass	General Solid Waste (non putrescible), Pre-classified as 'building and demolition waste' by the EPA	0.00	0.00	0.00	0.00	0%	0%	100%	0	Nil expected
7	Plasterboard	General Solid Waste (non putrescible)	19.80	0.00	2.20	22.00	90%	0%	10%	12	Transport to REGYP for recycling
8	Fixtures and Fittings	General Solid Waste (non putrescible)	0.00	0.00	3.67	3.67	0%	0%	100%	2	All to Landfill
9	Floor coverings	General Solid Waste (non putrescible)	0.00	0.00	0.00	0.00	0%	0%	100%	0	Nil expected
10	Packaging (pallets & wrap)	General Solid Waste (non putrescible)	0.92	0.73	0.18	1.83	50%	40%	10%	1	Return pallets to suppliers for reuse, suitable broken pallets to be mulched for landscaping, balance to landfill. Pallet wrap to be recycled at RePlas.
11	Garden waste	General Solid Waste (non putrescible), pre-classified as "Garden waste" by the EPA	0.00	2.93	0.73	3.67	0%	80%	20%	2	To off-site organics processing facility
12	Containers	General Solid Waste (non putrescible)	0.00	0.18	0.73	0.92	0%	20%	80%	0.5	Recycle suitable containers
13	Paper/cardboard	General Solid Waste (non putrescible)	0.00	1.47	0.37	1.83	0%	80%	20%	1	Recycle
14	Residual waste	General Solid Waste (non putrescible)	0.00	0.00	22.00	22.00	0%	0%	100%	12	All to Landfill
	Plastic	General Solid Waste (non putrescible)	0.00	1.83	0.00	1.83	0%	100%	0%	1	Various including pvc pipe & polycarbonate roofing to RePlas for recycling
15	Hazardous waste - paints, solvents	Preclassified as Hazardous Waste by the EPA	0.00	0.00	0.92	0.92	0%	0%	100%	0.5	Minimal expected. For disposal by licenced contractor
	TOTAL		64.73	59.04	59.59	183.36				100	

The figures in Table 4 exclude virgin excavated natural material (VENM) and natural excavated material (ENM) which will be recovered from excavations for retaining walls, site contouring, drainage works and levelling building pads. This material will be reused for beneficial purposes on site as follows;

- Levelling building foundations
- Site contouring and landscaping
- Flattening of internal road batters
- Engineered fill
- Retaining wall backfill
- Improvements to site surface drainage

The projected diversion of waste from landfill of 67% is slightly below the WARR target of 80% by 2021, however this can be partly explained by the regional location and reduced viable resource recovery options that are available.

Recycling and reuse of construction waste shall be maximised as indicated in Table 4, with minimal waste being diverted to landfill, towards WARR targets.

All materials reused on site shall be subject to beneficial re-use assessment. Beneficial re-use is where the land application of the material is legally compliant, genuine, fit for purpose reuse of the waste rather than another path to waste disposal.

Overall diversion projected waste material compositions & recovery rates are shown in Figure 37 and Figure 36.

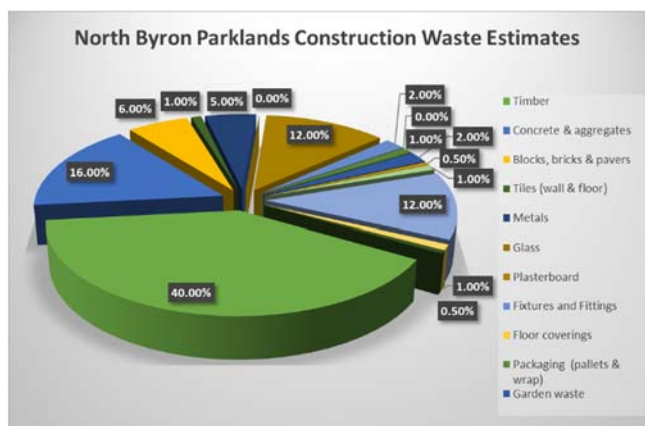


Figure 37 Construction waste composition

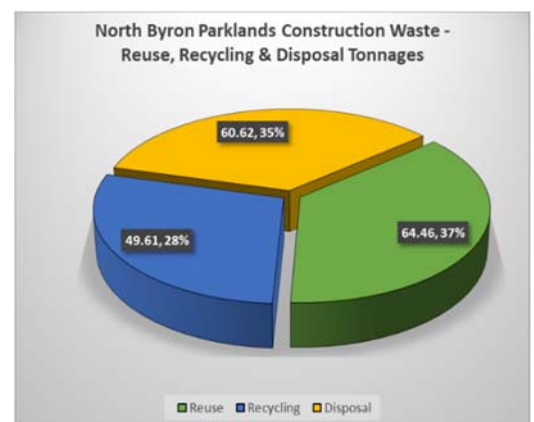


Figure 36 Construction waste recycling & reuse

Hard waste including concrete, gravels, concrete blocks and the like shall be judiciously utilised to reduce waste or otherwise transported to a licensed landfill for crushing and beneficial use. Pallets accumulated during the construction phase will be returned to suppliers where possible, some of which will be reused, and other suitable pallets will be processed with a mobile tub grinder or the like to produce mulch for landscaping use on site.

Uncontaminated plastic film, including bags and pallet wrap will be sent via contractor to RePlas²⁷ or the like (via waste contractor) to create plastic products.

²⁷ <http://www.replas.com.au/>

Plasterboard will be source separated and transported via hook-lift bins to REGYP Pty Ltd²⁸ at Redbank Plains, Queensland, or the like, for processing into agricultural fertiliser.

MGBs, skip bins and hook-lift bins will be provided, with appropriate signage to maximise separation of metals, comingled recyclables, cardboard, timber and masonry. Induction of contractors and staff will be undertaken to ensure that waste generation is minimised and reuse and recycling is maximised.

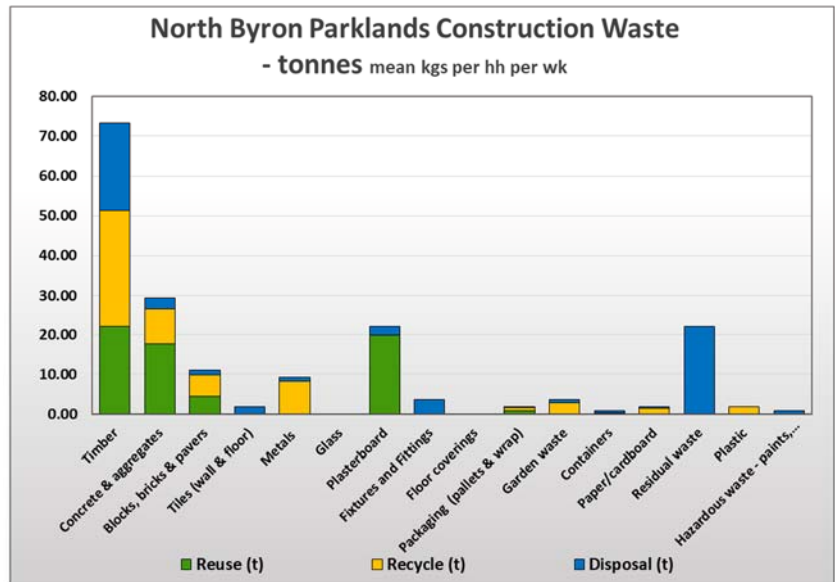


Figure 38 Quantities of building waste by type

As shown in Figure 40 the main construction wastes will be timber and plasterboard, much of which will be recovered for beneficial reuse and recycling.

Small quantities of hazardous wastes may be generated during the construction phase, such as paints, solvents, epoxies and the like. These will be isolated in the NBP storage shed for collection and disposal by licensed contractor.

12.3 WASTE MANAGEMENT OBLIGATIONS OF DEVELOPER AND BUILDING CONTRACTORS

At the time of undertaking this Waste Assessment, detailed drawings, specifications, construction certificates, and appointment of contractors and sub-contractors to procure materials and undertake the building and civil works were in abeyance, pending determination of the EIS for the SSD. Thus there were some unknowns in preparing this Assessment. Implementation of best construction waste management will need to be implemented via robust contract conditions and procurement of contractors, materials and services.

Responsibility for sustainable construction waste minimisation and management in accordance with this Waste Assessment and conditions of development consent should be embodied in conditions of contract for appointed contractors and their subcontractors.

Conditions of contract for building construction and civil works should include commitments to good waste management practice, a transparent and auditable measurement system, and a robust reporting system.

²⁸ <http://www.regyp.com.au/>

Other requirements to be included in construction contracts with respect to waste management should include the measures outlined in Table 5 below²⁹:

Ref:	Contractor Obligations
1.00	Practices to minimise waste
1.01	Implementing the waste minimisation plan
1.02	Procurement procedures for construction materials that avoid unnecessary waste
1.03	Building for deconstruction
1.04	Building to standard sizes
1.05	Building for operational waste minimisation
1.06	Staff induction that promotes waste minimisation
1.07	Office & administration waste minimisation program
1.08	Monitoring / review process to evaluate and modify waste minimisation practices
1.09	Supply reports of quantities and types of waste materials recovered, recycled, transported and landfilled
1.10	Use of standard NSW recycling signs for waste receptacles
2.00	Use of recycled materials
2.01	Procurement that encourages use of recyclable or recycled materials
2.02	Practices that support material salvage & re-use where appropriate
2.03	Contract specifications for subcontractors that support re-use & procurement / purchase of recycled or recyclable materials where appropriate
3.00	Recycling and reuse of materials generated on site
3.01	Separation of discarded waste materials on site for reuse, recycling and disposal
3.02	Collection of unsorted discarded material for recycling
3.03	Deconstruction / excavation works and recovery, re-use & recycling of material prior to development
3.04	Recycling on site - Provision for office / public place
4.00	Litter abatement
4.01	Litter management on site
4.02	Litter management in transit
5.00	Fullfilling environmental requirements

Table 5 Construction waste contractor obligations

Waste bins shall be labelled using NSW EPA standard recycling signs³⁰ as per examples shown in Figure 39 below.



Figure 39 NSW EPA Standard recycling signs

²⁹ Adapted from <http://www.sustainability.vic.gov.au/-/media/resources/documents/publications-and-research/knowledge-archive/how-to-minimise-construction-and-demolition-waste/archive-construction-waste-minimisation-plan.pdf?la=en>

³⁰ <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>

12.4 LOCATION OF WASTE STORAGE AND VEHICULAR ACCESS

Construction works will be dispersed over the subject site. Good external road access and internal road access is available and proposed to allow placement of waste storage bins and access for waste collection vehicles.

Construction works will be undertaken in stages after the Development Consent is acted on. Waste storage bins will be located in proximity with the construction works being undertaken at any particular stage.

Construction works around the main Conference facility will be more constrained due to the contours of the land, however sufficient access and turning areas have been provided as shown on the architectural drawings.

Bins to be serviced during the construction phase will include skip bins, MGBs and hook-lift bins as appropriate.

Bin sizes and numbers and location shall be sufficient to allow for source separation of the waste streams as per this Plan within close proximity to where works are being undertaken at any particular construction phase.

There is sufficient access on the NBP site for waste collection vehicles to access construction areas where bins will be located, via internal roads and turning areas as shown on the architectural drawings.

12.5 TRAINING

All employees, contractors and subcontractors working on the NBP site should undergo induction training in regard to waste management issues, including:

- the requirements of this Construction Waste Minimisation Plan
- relevant legislation as identified in this report
- NBP EHSM
- Relevant development consent requirements
- the NSW WARR Strategy
- Waste tracking and reporting requirements
- Relevant contract clause requirements
- Waste minimisation, reuse, recycling and storage
- Waste handling, collection and transport
- On site reuse procedures and requirements

12.6 COMPLIANCE

The General Manager of NBP will arrange for regular monitoring and audits to ensure that contractors are satisfying their obligations with respect to waste management pursuant to legislation, conditions of development consent, contracts, and this Plan.

The audits shall include but not be limited to inspection of records, bin contamination levels, litter control, adequacy of bins to optimise source separation and provide sufficient capacity, reuse of waste materials on site, and destination of waste streams.

Non-conformances will be dealt with in accordance with legal requirements, if relevant, and contract conditions.

PART 13 ONGOING OPERATION OF CONFERENCE FACILITY, ACCOMMODATION & ANCILLIARY BUILDINGS

This Part describes the arrangements for ongoing waste management at the conference facility, accommodation and ancillary buildings. This Part does not deal with event waste management arrangements, including the Gold Bar, which are dealt with in Part 10 of this Assessment.

The buildings being the subject of this assessment are as follows:

- Cabins – 30 cabins each with two separate accommodation units.
- Conference facility – comprising a fully enclosed mess hall, commercial kitchen, roofed deck dining, bar, conference rooms, offices and administration areas.
- Multi-purpose building – comprising multi-purpose hall, laundry, workshop, general purpose storage, and waste storage area.
- Treatment Rooms
- Day Spa
- Yoga/Meditation Room

These parts of the development will provide spaces for conferences, workshops, retreats, related exhibits, health and beauty treatments, meditation and accommodation for these purposes. It will also serve as the administration centre for NBP operations.

The multi-purpose building will also serve as a bar area for the medium and large annual events, these currently being the Falls Festival and the Splendour in the Grass Festival.

The cabins which do not have kitchens will be fully serviced on a daily basis.

The proponent for this SSD has advised that all waste generated at the above buildings will be directed to a central waste storage area on the ground floor of the multi-purpose building as shown in architectural drawings.

For this assessment, waste generation rates were calculated based on type of use, floor areas and number of units. Using this, data calculations were made of the required waste storage area, taking into account waste storage capacity requirements, manoeuvrability, recycling needs, bin sizes and footprints. Calculations were based on the Byron Shire DCP Chapter Waste Minimisation and Management & NSW EPA Guidelines. For this purpose an Excel Model was developed to evaluate different options.

Inquiries made with the incumbent waste collection contractor revealed waste and recycling bins could be emptied on a daily basis. The Model showed that for daily collection a waste storage area of 10.91 would be required as shown in Appendix 3, or alternatively if serviced not less than every two days an area of 18.4 m² would be required as shown in Appendix 4. The bins types, bin capacities for FOGO, mixed waste and recycling are given. Practicable recoverable FOGO has been estimated as 20% of the mixed waste stream, being almost wholly generated by the restaurant. Waste signage shall be provided as per NSW EPA standard designs to clearly depict what should and should not be placed in each bin.

The waste storage floor calculations exclude additional storage that would likely arise when the multi-purpose hall and meditation room are used as bars during the two annual festival events described above. During these periods additional bin and clearance frequencies will be provided.

Taking a conservative approach this assessment recommends that a waste storage area of around 18.4 m² be provided, which would allow for peaks and potential service difficulties that may arise. In discussions with the architect and the client this has been accepted and is reflected in the architectural drawings.

The waste/recycling storage area shall:

- Be suitably signposted to make it clear that the waste/recycling storage area is not to be accessed by the public or guests.
- Have lidded bins and be enclosed so as to prevent vermin from entering.
- Have a smooth, durable floor and be enclosed with durable walls/fences that extend to the height of any containers which are kept within.
- Be provided with a durable gate to the waste/recycling storage area, with a sign adjacent to indicate that the door/gate is to remain closed when not in use. The gate will be openable from both inside and outside the storage area and will be wide enough to allow for the easy passage of waste/recycling containers.
- Be serviced with hot and cold water provided through a centralised mixing valve. The hose cock will be protected from the waste containers and must be located in a position that is easily accessible when the area is filled with waste containers.
- Have the floor graded so that any water is directed to an approved floor waste and discharge to the on-site sewage management systems or the sewer when it becomes available.
- Include signage that clearly describes the types of materials that can be deposited into recycling bins and general garbage bins.

Arrangements shall be put in place for the regular maintenance and cleaning of the waste/recycling storage area. Waste/recycling containers shall only be washed in an area which drains to the on-site sewage management system, or sewer when it becomes available.

Sufficient driveway and manoeuvring area shall be provided to allow for front lift and side lift waste compactors to safely access the waste/recycling storage area, clear the waste bins, and exit.

Staff, lessee/s and contractors will be inducted regarding sustainable waste management on the NBP site.

Source separation of waste and recyclables will be encouraged throughout the building spaces including administration offices.

This assessment has found that a room area of 18.4 m2 will provide adequate space to store waste and recycling receptacles and provide sufficient space for manoeuvrability.

PART 14 TRANSPORT AND DESTINATION OF WASTE MATERIALS

Table 6 lists the proposed waste collection contractors and destinations of waste materials generated on the NBP site during the construction phases, events and general operations.

Contractor/Premises	Address	Scheduled Activity	NBP Waste Stream	NSW EPA EPL
BIOCycle plant -Lismore Recycling and Resource Recovery Centre	313 Wyrallah Road, East Lismore	Composting, resource recovery, waste processing and disposal	GO & FOGO	No. 13128
Tweed Shire Council	Stotts Creek Resource Recovery Centre, 298 Bartletts Road, Scotts Creek	Resource Recovery	Construction waste, recyclables, e-waste,CFLs, chemicals, green waste trunks or stumps	No. 6108
Solo Waste Aust Pty Ltd	PO Box 1427, Kingscliff NSW 2487	Transport of category 1 and category 2 trackable waste	Hazardous Wastes and clinical (Special) waste	No. 10874
Solo Resource Recovery	Round Mountain Rd, Hastings Point	Non thermal treatment of hazardous and other waste	Grease trap Waste	No. 11221
Ti Tree Bioenergy landfill	Champions Way, Willowbank, Qld	NA	General Solid Waste (non putrescible), General Solid Waste (putrescible)	NA
City of Gold Coast, Commercial and Domestic Landfill	16 Rossmans Rd, Stapylton, QLD	NA	General Solid Waste (non putrescible), General Solid Waste (putrescible)	NA
Solo Resource Recovery	86-88 Chinderah Bay Dr Chinderah	NA	General Waste collection contractor	NA
RePlas	50 Elsworth Street East, Ballarat	NA	Film plastics, incl pallet wrap	NA
Regyp	Cnr Redbank Plains Rd and Newhill Drive, Redbank Plains QLD 4301	NA	Plasterboard	NA
A&N Morris	37 Yarrabee Terrace, Stokers Siding NSW 2484	NA	Scrap Metal	NA
Greg Cromwell - Farmer	Goonengerry	NA	Food Waste - for pig farm	NA
Byron Central Hospital	54 Ewingsdale Road, Ewingsdale, NSW 2481, Australia	NA	Clinical Waste	NA
Various	Various	NA	Used Cooking Oil	NA
Community groups and local charities	Various	NA	Discarded Camping equipment	NA

Table 6 NBP Waste transporters and destinations

Transport contractors and destinations of waste materials may change based on prevailing laws, commercial considerations, availability of transport contractors, and new or updated waste processing facilities and landfills. The overriding caveat being that all waste collection, and transport to waste facilities shall be conducted in accordance with relevant statutes as described in this Assessment.

It is evident that the management systems which have been developed and implemented by NBP, pursuant to the requirements of the Concept Approval, in particular the EHSM and Waste Management Standard NBP Standard 014 have proved to be effective in delivering sustainable event waste management. These systems provide a robust framework for sustainable waste management for future events as proposed in this SSD.

NBP and event operators have demonstrated strong commitment, in line with the NSW WARR Strategy, to maximise recovery of event waste resources for beneficial use and reduce diversion of waste to landfill.

The imminent commencement of the NSW container deposit scheme will introduce monetary incentives to recover eligible beverage containers from the waste stream. This will open up opportunities for Parklands event operators to better encourage patrons to source separate and reduce litter.

Despite the comprehensive measures to encourage campers to remove camping equipment and provisions upon leaving the site, this issue has proved to be problematic. This problem is not unique to NBP events. This will require ongoing investigation and continuous improvement, drawing upon evolving international best practice.

NBP and event managers have gone to great lengths to encourage waste minimisation, and maximise reuse and recycling. However there are opportunities to improve the overall landfill diversion figures for future events through continuous improvement including measures to reduce camp ground waste generation, better efficiency of resource recovery from the waste stream, and further measures to enhance patron festival recycling behaviour

Despite behavioural recycling, reuse and clean up challenges, management of waste has been undertaken effectively by event operators. The NBP site was entirely cleaned of discarded patron waste and litter within a week of the conclusion of the 2017 STIG event.

For the 2017 STIG, a total of 1267 bins of various sizes were placed in strategic locations around the site. More than half the bins provided were for recyclables and Food organics and garden organics (FOGO). The total volume of these bins amounted to 441 cubic metres. Emptying of bins across the site was continuous averaging twice daily. Waste storage and servicing arrangements will need to be adjusted commensurate with increased patron numbers of potentially up to 50,000. This adjustment would be easily accommodated on this large site.

Implementation of the measures described in this Waste Assessment will minimise construction waste and promote ongoing sustainable waste management at the NBP site, consistent with the NSW Waste Avoidance and Resource Recovery Strategy and relevant statutes, policies and guidelines.

In summary, it is considered that:

- 1. The current NBP management framework, in particular the Environmental Health and Safety Management Manual, that has evolved and which been implemented is both rigorous and comprehensive ,and serves as a sound foundation for ongoing sustainable waste management at future larger events, as proposed in this SSD.**
- 2. Implementation of the measures contained in this Waste Assessment will minimise construction waste and promote sustainable waste management at the NBP site, consistent with the NSW Waste Avoidance and Resource Recovery Strategy and relevant statutes, policies and guidelines.**

PART 16 ABBREVIATIONS

ABBREVIATION	DEFINITION
AS	Australian Standard
AWT	Alternative Waste Treatment
C&D	Construction and Demolition - actions that arise from construction, demolition, renovations and excavation.
C&I	Commercial and Industrial
CDS	Container Deposit Scheme
DCP	Development Control Plan
EHSMM	Environmental, Health and Safety Management Manual
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EMM	Event Management Manual
EMP	Event Management Plan
EMS	Environmental Management System
EP&A	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPL	NSW Environmental Protection Licence
FFB	Falls Festival –Byron
FOGO	Food Organics and Garden Organics
GO	Garden Organics
IEC	Impact Environmental Consultants
HID	High Intensity Discharge (lights)
KPIs	Key Performance Indicators
LEP	Local Environment Plan
LGA	Local Government Area
MAF	Mobile Aerated Floor composting system
MGB	Mobile Garbage Bin
MRF	Materials Recovery Facility at which recyclable materials are separated into individual commodities.
MSW	Municipal Solid Waste
NBP	North Byron Parklands
OH&S	Occupational Health & Safety
OHS	Occupational Health & Safety
PEA	Preliminary Environmental Assessment
POEO	NSW Protection of the Environment Operations Act
RRA	Regional Regulated Area
SCC	Specific Contaminant Concentration
SEARs	Secretary's Environmental Assessment Requirements
SITG	Splendour in The Grass (Festival)
SSD	State Significant Development
SWMMP	Site Waste Minimisation and Management Plan
TCLP	Toxicity Characteristics Leaching Procedure
tpa	Tonnes per annum
VENM	Virgin Excavated Natural Material
WARR Strategy	NSW Waste Avoidance and Resource Recovery Strategy
WMP	Waste Management Plan
WMS	Waste Management Standard

PART 17 GLOSSARY

TERM	DEFINITION
Avoidance	Eliminating waste at its source
Biosolids	The residual sludge produced from wastewater treatment at sewerage plants.
Bump in	Means the period in which temporary infrastructure is assembled prior to the commencement of an event;
Bump out	Means the period in which temporary infrastructure is dismantled at the conclusion of an event
Comingled	This term is often used to refer to a mixture of containers (such as glass and plastic bottles, steel and aluminium cans), paper and cardboard.
Co-mingled Recyclables	A waste stream that substantially includes a mixture or blend of recyclable materials.
Commercial and Industrial	Industries that include shopping centres, restaurants, offices, manufacturing, repair workshops, all retail outlets, hotels, clubs and institutions such as schools, hospitals, universities, nursing homes and government offices but excluding construction and demolition industries.
Composting	The process of controlled biological decomposition of organic material.
Contamination	The introduction of a material in a concentration into a product that makes it unfit for its intended use.
Council	Byron Shire Council
Disposable	Any product or material that is designed to be thrown away after a single use.
Disposal Fee	The fee charged at designated facilities for the disposal of waste
Diversion	The recycling or reprocessing of materials that would have otherwise been sent to landfill.
Drop-Off	Domestic self-haul waste delivered to approved waste facilities
Event Producer	Means the organisation hosting an event
Generators	Those responsible for waste creation
Greenwaste	Waste comprising vegetative organic materials including garden waste, food waste and wood waste
Hazardous Waste	A substance which is explosive, corrosive, flammable, reactive, contagious, and/or toxic
Landfill	A facility designed and operated for the disposal of waste material by burying
Organic Waste	The part of the waste stream that is comprised solely of animal or plant matter and typically from which compost can be created.
Patron	Means anyone who has purchased a ticket to attend an event
Recyclable Material	Material that is able to be re-processed and used as an input for the manufacture of either the same product or another product.
Recycle	The process of source separating from the solid waste stream products that are no longer useable in their present form and that can be used in the manufacture of new products.

Residual Waste	Waste remaining from household sources containing material not separated for recycling or reprocessing
Reuse	The repeated use of a product in the same form but not necessarily for the same purpose, without further manufacture.
Source Separation	The separation of recyclables from the waste stream at the source of generation.
Subject Site	Refers to the proposed residual Parklands 229.34 hectare site, after land swaps, subdivision and boundary adjustments have been concluded. This residual land being the subject of this SSD.
Sustainability	Activities that meet the needs of the present without compromising the ability of future generations to meet their own needs.
Trackable Waste	Wastes that under the PoEO (Waste) Regulation 2014 must be tracked from the point of origin to the point of disposal using the EPA's online waste tracking system.
Transfer Station	An intermediate facility where waste material can be delivered locally before transportation to a disposal site.
Waste Facility	Any premises used for the storage, treatment, processing, sorting or disposal of waste.
Waste Minimisation	Reducing the quantity of waste requiring disposal through waste reduction, reuse or recycling.

PART 18 APPENDICES

Appendix 1 – Waste Management Standard –NBP 014

Document Title: Waste Management Standard		Revision No: 3
Issue Date: 28 September 2016	Doc. No: NBP Standard 014	Page 1 of 3

Waste Management Standard



Prepared By: M Morris	Reviewed By: S Connelly and R Doolan	Approved: J Ducrou
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Document Title: Waste Management Standard		Revision No: 3
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1. Application

As part of Parklands EH&S Management Manual and specific commitments under its EH&S Policy, all major and moderate event operators are required to comply with the requirements of this standard.

This standard documents certain actions, risk assessments, plans and/or processes required to be undertaken by event operators in order to successfully host an event at Parklands. This standard also documents certain roles and responsibilities covering event operators and Parklands management.

2. Standard Parameters

2.1 Waste Management

- 2.1.1 Develop a Waste Management Plan (WMP) that addresses general waste, recycling, organics (where being considered) and bump in/bump out waste streams;
- 2.1.2 Include in the WMP an event diagram showing waste and recycling bin locations and types (i.e. skip bins, compactors, etc);
- 2.1.3 Include in the WMP details of all waste and recycling contractors used;
- 2.1.4 Include in the WMP an event diagram showing the primary sorting and storage area for specific material streams including reusable items, general waste, cardboard, commingled containers and organics;
- 2.1.5 Provide details of the front of house waste and recycling system with a view to maximising recycling rates and reducing the generation of general waste in line with the NSW EPA's Waste Wise Event guidelines;
- 2.1.6 Provide details of all waste facilities including license details (if applicable) where general waste, recycling, organics (where applicable) and bump in, bump out waste streams are disposed to;
- 2.1.7 At the end of any 'bump out' period, all litter and solid waste is to have been removed from the road reserves of Jones Road and Tweed Valley Way where they adjoin the site;
- 2.1.8 Ensure all waste and recycling infrastructure is positioned in a manner to avoid material entering drains and waterways; and
- 2.1.9 An appropriately stocked spill kit will be stored at the emergency management centre for any spills or accidents.

3. Actions and Responsibilities

3.1 General Manager

The General Manager shall:

- Provide advice to event operators regarding the requirements of this standard;
- Provide feedback covering the Waste Management Plan;
- Liaise as required with the event's nominated representative responsible for waste management; and
- Audit event operator's compliance with waste management requirements.

3.2 Event Operators

Event Operators shall:

- Develop and submit a Waste Management Plan to the General Manager, Parklands prior to the event;
- Provide contact details to the General Manager, Parklands of the event's representative responsible for waste management; and

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- Report any non-compliance(s) with waste management requirements within 24 hours to the General Manager, Parklands. Serious incidents shall be immediately reported verbally to the General Manager.

4. Revisions

- Revision of actions in Section 2 to align with Planning and Assessment Commission project approval consent conditions dated 26 April 2012;
- Revision of actions in Section 2 to reflect best practice waste management practices based on 7 events held at Parklands; and
- Revision of roles and responsibilities in Section 3 per changes in Section 2.

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SPLENDOUR in the GRASS

Waste Management Plan 2017

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Compiled by Max Tischler- 2017 Environmental, Waste & Resource Recovery Manager

Preface

This document provides a contextual background to the issues surrounding waste management at Splendour in the Grass music festival, and outlines operational procedures, protocol and logistical constraints for the 2017 event.

It is introduced to highlight the need for an integrated approach to waste management, with a general analysis of the proposed waste streams, locations and removal- to ensure the highest diversion away from landfill as is practically possible.

This plan is in accord with the 2007 NSW Department of Environment and Conservation *WasteWise Events Guide*.

Why the traditional practice of landfilling is unsustainable

Historical disposal sites are filling up:

As urban and regional populations and patterns of disposable consumption continue to grow in Australia, the volume being generated within our cities and towns is *increasing* not decreasing. It is now a greater challenge for governments to sustain accessible landfill sites in close proximity to our cities and towns.

Environmental impacts:

The first serious impact comes from methane greenhouse gases, which can leak into the atmosphere from the breakdown of organic waste in landfill sites. Another harmful impact is leachate, a liquid containing toxic chemicals, metals and compounds that also forms in landfill sites. Rubbish in the environment can also have a devastating impact on wildlife and pollute waterways, rivers and the ocean.

Understanding the true environmental and ethical costs of producing materials:

As our society has grown more aware about what it really takes to produce the materials that we consume, 'waste' is now increasingly being recognized as a valuable resource, which should neither be buried nor incinerated when opportunities can exist for re-use and recycling

1. Background

Splendour in the Grass (SITG) has run annually since its inception in 2001, with patron numbers ranging from 6,000 in its first year to 32,500 (in 2010, 2011 & 2016) across the varying event locations (Belongil Fields, Byron Bay; Woodfordia, Woodford; NBP, Yelgun). Considering the environmental and social exigencies of producing an outdoor event in regional areas, the management of waste has always and will continue to remain a priority for the event- especially the diversion of waste from landfill.

Over the years a range of waste management strategies have been introduced and implemented. These have required continual revision and adaptation to manage Federal and State Policy changes, festival size and community expectations- including revised site planning, the diversification of cyclical waste streams, improved infrastructure, as well as the education and engagement of event patrons, suppliers and staff.

2. Objectives

This waste management plan will:

1. Provide a safe, clean environment for patrons, suppliers and staff,
2. Minimise the environmental impact of the event,
3. Ensure compliance to NBP Event Management Manual and NBP Environmental Health and Safety Management Manual

which will be achieved by implementing a range of adaptive measures across the three spatial components of the festival- principally external; internal; and camping areas (Section 3), and throughout the activation period- including site build; event interval; and breakdown (Section 4). These strategies are in compliance with, and have been adapted from the 2007 NSW Department of Environment and Conservation Waste Wise Events Guide.

The principal objective is to achieve high rates of diversion from landfill by reducing cross contamination of waste streams and incorporating all suggested strategies from the aforementioned Waste Wise Guidelines (see Checklist p.10), as well as enforcing compliance by contractors.

In summary, waste will be continually collected from its source, delivered to the waste and recycling depot, before being removed from the event site. Contractors will be held responsible for delivery to pre-determined endpoints.

3. Infrastructure & Strategies

3.1 Front of House (FOH)/Internal Area

This area comprises the primary event site where patrons have access to stages, food vendors, bars, market stalls and other festival features.

This area will be serviced by clearly labelled vermin-proof 240L plastic ‘wheelie’ bins- dispersed throughout with one yellow-topped co-mingled recycling bin paired with one red-topped general waste bin. Additional strategically placed green-topped bins will be banked with these (red/yellow) pairings- primarily in and around food halls and vendors.

3.2 Back of House (BOH)/Internal Area

This area comprises all those associated with the event workings- including stages, production offices, artist compound, bars, food vendors, ticketing offices, patron thoroughfares, work depots, carparks and, others.

Collection of waste will be activated by contracted staff using Over-head Lift (OHL) & Rear Loading (RL) 8t Compacting Trucks, 4WD Utilities and AWD Mules with trailers- on a rotational roster that minimizes interference with festival times, festival staff or patrons.

3.2.1 BOH Food vendors and Bars

These areas will have a variety of skips, bins and holding points. Generally, a three-compartment choral (using temporary fencing screens) will be established for general waste, co-mingled recycling and cardboard. Serviced vermin-proof 240L bins will be placed within the general waste and recycling compartments, whilst weld-mesh cages and wool bale/bulk bags will be utilised for cardboard deposition. Some inaccessible bars and locations (e.g. Smirnoff Bar) will have 3m³ skip bins placed within the general waste compartment to compensate for delayed servicing or overflow.

Food vendors will be provided with 140L bins for pure organic waste.

3.2.2 Work areas, Offices, Stages and compounds

These areas will be serviced with a mix of vermin-proof 240L general waste (red lid), co-mingled recycling (yellow lid), compostable (green lid) bins, and 120L general waste bins- all clearly labelled.

3.2.3 Carparks & BOH Thoroughfares

These areas will be serviced by clearly labelled paired vermin-proof 240L general waste and co-mingled recycling bin stations.

3.3. Camping

This area comprises all those associated with the event campgrounds-including offices, food vendors, stores and campsites.

Offices and vendors will be serviced using the same infrastructure for BOH (see 3.2.1 and 3.2.2).

Upon arrival and throughout the event duration, camping patrons will be supplied with general waste and co-mingled recycling bags. Clearly marked drop-off points will be employed for patrons to leave filled bags for routine collection.

Collection of waste will be activated by contracted staff using AWD Mules and trailers-between the hours of 800am and 500pm.

3.4 External

This area is inclusive of all those outside the event perimeter, including Guest Services, carparks, road verges and other specific locations directly affected by patron traffic and use (e.g. local bus depots and taxi ranks).

Staffed areas (e.g. Guest services or production offices) will be serviced with a mix of vermin-proof 240L general waste (red lid), co-mingled recycling (yellow lid), compostable (green lid) bins, and 120L general waste bins- all clearly labelled.

All other locations (e.g. bus depots) will be serviced by clearly labelled paired vermin-proof 240L general waste and co-mingled recycling bin stations. Other areas will be routinely inspected and serviced by contracted cleaning crew and volunteers.

3.5 Waste and Recycling Depot

This area is located on the old McLennan Field and will service all waste from the Internal, Camping and External areas.

3.5.1 General Waste Compound

This area will include one 15m skip and multiple 3m³ skips, within a contained fenced area, where general waste bags are deposited before being loaded directly into on-site OHL and RL 8T compaction trucks (see Section 4.2).

3.5.2 Recycling Compound

This area will include a fenced area where co-mingled recycling bags can be held, before being sorted onto five functional tables (undercover). The resultant clean stream of co-mingled recyclables will be loaded directly into an on-site Side-Loading (SL) 8T Compaction Truck. A representative from our waste contractor will be required to verify each load of non-contaminated waste- to ensure full compliance at the destination end-point.

A number of 3m3 skips will be utilised in this area for specific recyclable items such as plastic pallet wrap and glass.

An electric compactor will be used in this compound for the collection and baling of aluminum cans.

3.5.3 Compostables Compound

This area will contain one 15m skip (covered with tarpaulin) and receive all compostable waste from the event.

3.6 Patron Education and Incentives

As has been implemented in the past official SITG volunteers (Eco-Cops/WasteWarriors) will be utilised to educate and incentivise patrons throughout the event. This will include an educational hub providing information on the SITG waste management system; judicious schedules for manned waste stations with the internal event- especially those within food vendors and marketplaces and; roaming volunteers offering incentives to patrons- especially within the campgrounds.

3.7 Environmental Audits

In compliance with the NBP Environmental Health and Safety Management Manual routine checks will be made of all event and property boundaries, ecotones and corridors plus natural and artificial drainage lines. These areas will be monitored and cleaned from all litter before, during and after the event periods.

4. Activation Periods and Staffing

4.1 Build (Monday 26 June to Sunday 16 July)

Basic waste infrastructure will be on-site from the commencement of the building phase, including bins and 15m skips to service the needs of the site and crew- serviced weekly by our waste contractor during this period. All other dedicated infrastructure will be delivered and placed by 16 July.

Contracted cleaning staff will be rostered from the start of the bump-in period. These numbers will build throughout the bump-in process to reflect the overall needs of the site and crew. A team of volunteers will be used to assist in the distribution and set-up of the waste system on and following the 16 July.

Splendour in the Grass 2017 – *Waste Management Plan*

4.2 Event Interval (Monday 17 July to Monday 24 July)

All waste infrastructure will be in-situ before the event interval.

Internal Area: Contracted cleaning staff will be on 10 hour shifts- from Monday 17 July to 19 July, and then on a rotational basis covering a full 24 hour cycle from Thursday 20 July to (and including) Monday 24 July.

Camping: Contracted cleaning staff will be on 9 hour shifts- between 800am and 500pm from Thursday 20 July to (and including) Monday 24 July.

External: Contracted cleaning staff will be on rotational shifts- between 800am and 1000pm from Monday 17 July to (and including) Monday 24 July.

Recycling Depot: Contracted cleaning staff will be on rotational shifts- between 700am and 700pm from Tuesday 18 July to (and including) Monday 24 July (am).

Teams of volunteers will be utilised throughout this period to compliment the contracted cleaning staff- especially within the Campgrounds and Recycling Depot

Waste contractors will be on site from 500am starting Tuesday 19th July.

4.3 Breakdown (Tuesday 25 July to Tuesday 1 August)

Contracted cleaning staff will continue on rotational 10 hour shifts- from Tuesday 25 July to Tuesday 1 August throughout the event site.

The event site will be free of all waste and waste infrastructure by Tuesday 1 August.

5.Waste Streams and End Points

After 16 years a considerable amount of data, knowledge and anecdotal information has been gathered to indicate the likely waste streams at the festival. Whilst a degree of control can be enforced within the internal site- by regulating consumable goods (via food vendors and bars)- a significant proportion of the festival waste is generated in the campgrounds, car parks and beyond. Below is a list of anticipated waste streams, and their end points.

General Waste

Generated across all areas and times of the event- this includes all non-recyclable, non-salvageable, non-compostable waste streams.

Compacted general waste will be transported to the Ti Tree Bioreactor in Ipswich, via the Stapylton Waste Facility.

Co-mingled Recyclables

Generated across all areas and times of the event – this includes clean, uncontaminated hard plastics (1-7), aluminium cans, glass and clean paper.

Compacted co-mingled recyclables, including baled cardboard and aluminium cans will be transported to the Materials Recovery Facility (MRF) at Chinderah.

Other recyclables

Uncontaminated plastic film, including bags and pallet wrap will be collected for deposition with RedPlas (via waste contractor) for inclusion in the RedCycle soft plastics recycling.

Compostables

The festival is assured compliance by its food vendors that all serving plates, containers, cups and cutlery are certified compostable. These items, including any contaminated (i.e. by food or mud) paper will be collected and transported to the MRF at Lismore for inclusion in their industrial composting process.

Organic Waste

Pure organic waste from food vendors will be collected daily by a local farmer and transported to his farm in Goonengarry, and included in his composting program.

Liquids

Used cooking oil will be collected daily by an local contractor, and run through his mobile filtration facility.

Sharps and Medical

Two 240L assigned locked medical bins will be placed with medical services in the ECC. This will be collected and disposed of by Solo- our licensed waste contractor.

Salvageable Goods

Generated across all areas of the event- primarily during the build and breakdown.

Building materials, including scrap metal and timber will be collected and on sold.

All discarded camping equipment, clothes and footwear will be collected (with the assistance of several community groups) and donated to local charities.

6. Waste Contractors

Waste Contractor and Infrastructure

Solo Resource Recovery, 86-88 Chinderah Bay Dr Chinderah NSW Cleaning Contractor And

Staffing

Total Building Maintenance, Unit 1B, 2023 Sandgate Road, PO Box 381, Virginia BC QLD

Pig Farmer/Compositing

Greg Cromwell, Goonengerry

End Points

Ti Tree BioReactor, Champions Way Willowbank QLD

Stapylton Commercial and Domestic Waste, 16 Rossmans Rd Stapylton QLD

Chinderah Material Recovery Facility, 86-88 Chinderah Bay Dr Chinderah NSW

Lismore Recycling and Recovery Facility and Industrial Composting, 313 Wyrallah Rd,
Lismore NSW



7. Strategies to Maximise RECYCLING at Splendour in the Grass 2017

CHECK LIST

Build & Establishment

- Ensure infrastructure is adequate and well placed
- Provide clear and interpretable signage and messaging
- Brief the cleaning and waste management staff, to ensure objectives are understood
- Advise stallholders and event staff of waste compliance and bin usage

Monitoring Bin Usage

- Adjust bin locations if necessary
- Maintain strategic and regular bin/bag exchange
- Ensure waste accumulation is minimised
- Monitor stallholders

Communications

- Ensure Waste Warriors, Green Team and Volunteers are engaging with festival patrons
- Maintain regular dialogue with stallholders
- Document all components of the waste management cycle

Evaluation

- Maintain log of bin usage
- Collect data on recycling vs. general waste- including generation rates, locations, and times
- Record recycling rates data at Recycling Depot

Adapted from the NSW Department of Environment and Conservation WASTEWISE Event Guide

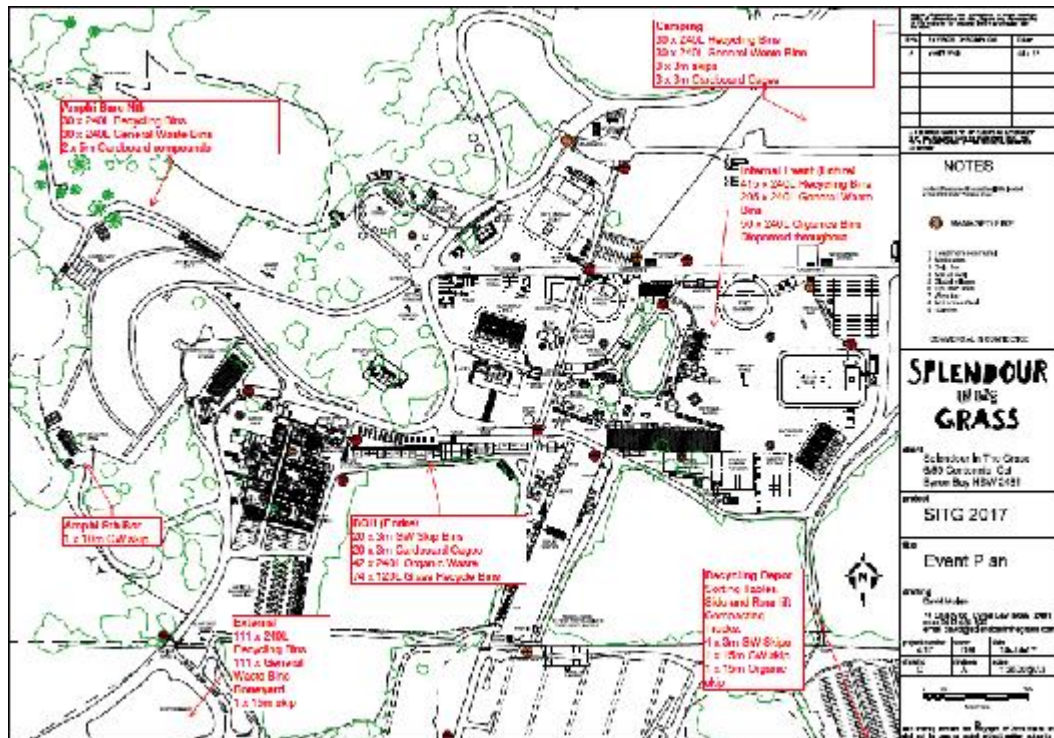


Figure 1- Location of waste infrastructure

Appendix 3 – Waste Generation and Storage Estimates- Daily Collection

		WASTE GENERATION AND STORAGE ESTIMATES FOR PROPOSED CONFERENCE, ACCOMMODATION & ANCILLARY BUILDINGS Based on Byron Shire DCP Chapter B8 - Waste Minimisation and Management & NSW EPA						
CLEARANCE FREQUENCY PER WK		7 per week		TOTAL STORAGE AREA REQUIRED -m ²			10.91	
Ref.	Building	Level	Waste (incl. FOGO)	Recycling	No. Units	Est. Floor area m ²	Waste	Recycling
			Waste generation rates per day.				Waste generation rates per week. (litres)	
1	CABINS							
2	Accommodation Rooms	GF	5 L/bed space	1 L/bed space	60	NA	2,100	420
2.1	CONFERENCE FACILITY							
2.2	Fully Enclosed Mess Hall	GF	10L/1.5m ²	2L/1.5m ²		246	11,468	2,294
2.3	Roofed Deck dining	GF	10L/1.5m ²	2L/1.5m ²		110	5,133	1,027
2.4	Bar	GF	50L/100m ²	50L/100m ²		30	15	15
2.5	Admin Office	GF	10L/100m ²	10L/100m ²		54	38	38
2.6	Conference rooms	LGF	10L/100m ²	10L/100m ²		234	164	164
2.7	Office BOH	LGF	10L/100m ²	10L/100m ²		15	11	11
2.8	Reception Desk	LGF	10L/100m ²	10L/100m ²		15	11	11
3	Multi Purpose Hall	1F	40L/100m ²	10L/100m ²		105.40	295	74
3	MULTI PURPOSE BUILDING							
4	Multi Purpose Hall	GF	50L/100m ²	10L/100m ²		192.00	672	134
4.1	OTHER							
4.2	Treatment Rooms	GF	60L/100m ²	10L/100m ²		122.22	513	86
4.3	Day Spa	GF	60L/100m ²	10L/100m ²		80.00	336	56
4.3	Yoga Meditation/assembly	GF	10L/100m ²	10L/100m ²		30.55	21	21
	TOTAL						20,777	4,349
Waste Requirements								
5.1	Capacity requirement - Allows for 20% of mixed waste volume allocated to FOGO.					FOGO	Waste	Recycling
5.2	Number of bins - m ³ /clearance (Calculated as weekly generation/7days *max days between clearances)					0.59	2.37	0.62
5.3	Capacity of each bin					1	1	1
5.4	Floor area of bins					1.1	3.00	1.10
5.5	Add manoeuvring space					1.33	2.80	1.33
	Total Storage Area Required					2.65	5.60	2.65



WASTE GENERATION AND STORAGE ESTIMATES FOR PROPOSED
CONFERENCE, ACCOMMODATION & ANCILLARY BUILDINGS

Based on Byron Shire DCP Chapter B8 - Waste Minimisation and Management & NSW EPA



CLEARANCE FREQUENCY PER WK

4 per week

TOTAL STORAGE AREA REQUIRED -m²

18.4

Ref.	Building	Level	Waste (incl. FOGO)	Recycling	No. Units	Est. Floor area m2	Waste	Recycling									
			Waste generation rates per day.				Waste generation rates per week. (litres)										
CABINS 1 Accommodation Rooms GF 5 L/bed space 1 L/bed space 60 NA 2,100 420 CONFERENCE FACILITY 2.1 Fully Enclosed Mess Hall GF 10L/1.5m² 2L/1.5m² 246 11,468 2,294 2.2 Roofed Deck dining GF 10L/1.5m² 2L/1.5m² 110 5,133 1,027 2.3 Bar GF 50L/100m² 50L/100m² 30 15 15 2.4 Admin Office GF 10L/100m² 10L/100m² 54 38 38 2.5 Conference rooms LGF 10L/100m² 10L/100m² 234 164 164 2.6 Office BOH LGF 10L/100m² 10L/100m² 15 11 11 2.7 Reception Desk LGF 10L/100m² 10L/100m² 15 11 11 2.8 Multi Purpose Hall 1F 40L/100m² 10L/100m² 105.40 295 74 MULTI PURPOSE BUILDING 3 Multi Purpose Hall GF 50L/100m² 10L/100m² 192.00 672 134 OTHER 4.1 Treatment Rooms GF 60L/100m² 10L/100m² 122.22 513 86 4.2 Day Spa GF 60L/100m² 10L/100m² 80.00 336 56 4.3 Yoga Meditation/assembly GF 10L/100m² 10L/100m² 30.55 21 21 <tr> <td colspan="7">TOTAL</td> <td>20,777</td> <td>4,349</td> </tr>									TOTAL							20,777	4,349
TOTAL							20,777	4,349									

Ref.	Waste Requirements	FOGO	Waste	Recycling
5.1	Capacity requirement - Allows for 20% of mixed waste volume allocated to FOGO.	1.19	4.75	1.24
5.2	Number of bins - m ³ /clearance (Calculated as weekly generation/7days *max days between clearances)	1	2	1
5.3	Capacity of each bin	1.5	3.00	1.50
5.4	Floor area of bins	1.80	5.60	1.80
5.5	Add manoeuvring space	1.80	5.60	1.80
Total Storage Area Required		3.60	11.20	3.60

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NORTH BYRON PARKLANDS

Waste Assessment

October 2017

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