



NATIONAL CELTIC FESTIVAL

Resource Recovery Report 2019

B-Alternative

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B-Alternative Resource Recovery

Overview

ABOUT B-ALTERNATIVE

B-Alternative is an environmental solutions group helping businesses and individuals transition to lower impact operation and living. B-Alternative work within 4 core pillars: Event and business resource recovery, corporate environmental consultancy, school resource recovery programs, and providing reusable, sustainable alternatives to single use items.

We have seen great success with our current business models. At Queenscliff Music Festival 2018 with 6000+ punters each day over 3 days, we were able to divert 90% of waste from landfill (see graphic below).

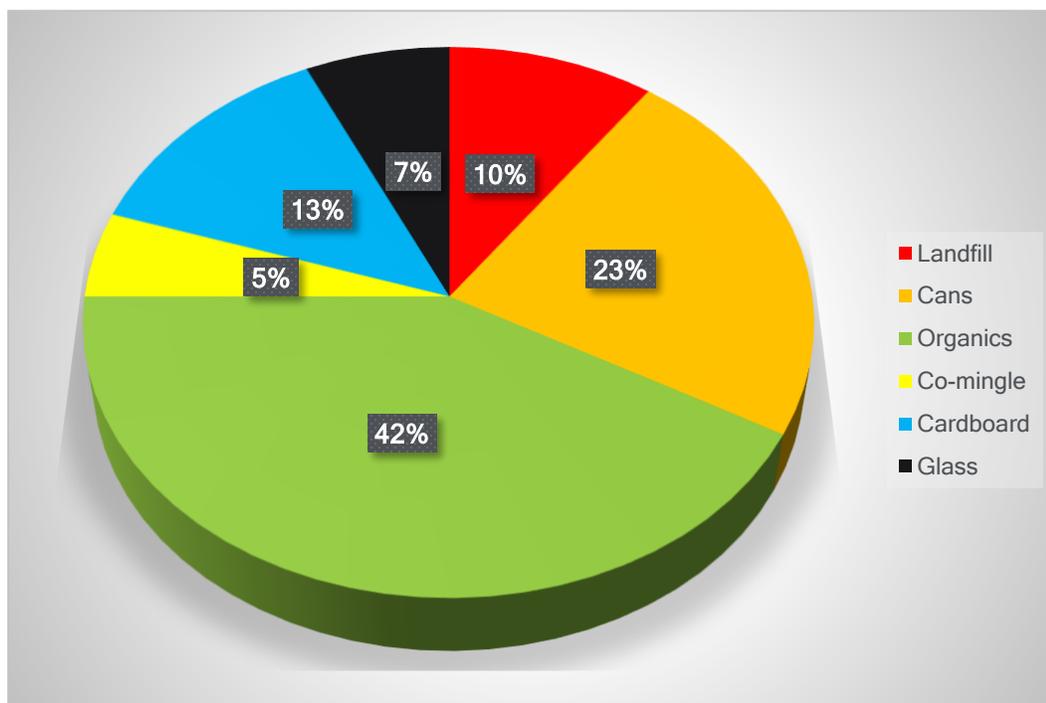


Figure 1. Results of resource recovery after Queenscliff Music Festival 2018. Percentages represent the quantity of waste (M³) sent to different resource recovery and waste streams.

AIM

Our aim for the National Celtic Festival (NCF) was to implement a reusable crockery/cutlery system that minimised packaging waste, and ultimately divert as much waste as possible from landfill. By engaging patrons to embrace the reusable system, we hope behavior change can arise and individuals take this behavior back into their communities i.e. embracing reusable living. We utilise several models to assist us in achieving these results:

- Ensuring all vendors adopt the reusable kit system and have only 100% compostable packaging as a back up
- Encourage as many patrons as possible to 'eat in' and utilise our reusable kit service
- Removing as much single use plastic and turning it into furniture (e.g. picnic bench)
- Utilising bin staff to ensure there is no contamination at the point of rubbish disposal for punters
- Having back of house environmental consultants to ensure the decontamination crew are sorting waste into the correct streams

Results

Table 1. Weight (kg) of resources/waste sent to their specific handling streams, post NCF 2019.

Resource/Waste Stream	Kg
Compost	175
General	330
Cardboard	240
Cans	35
Soft plastic to furniture	50

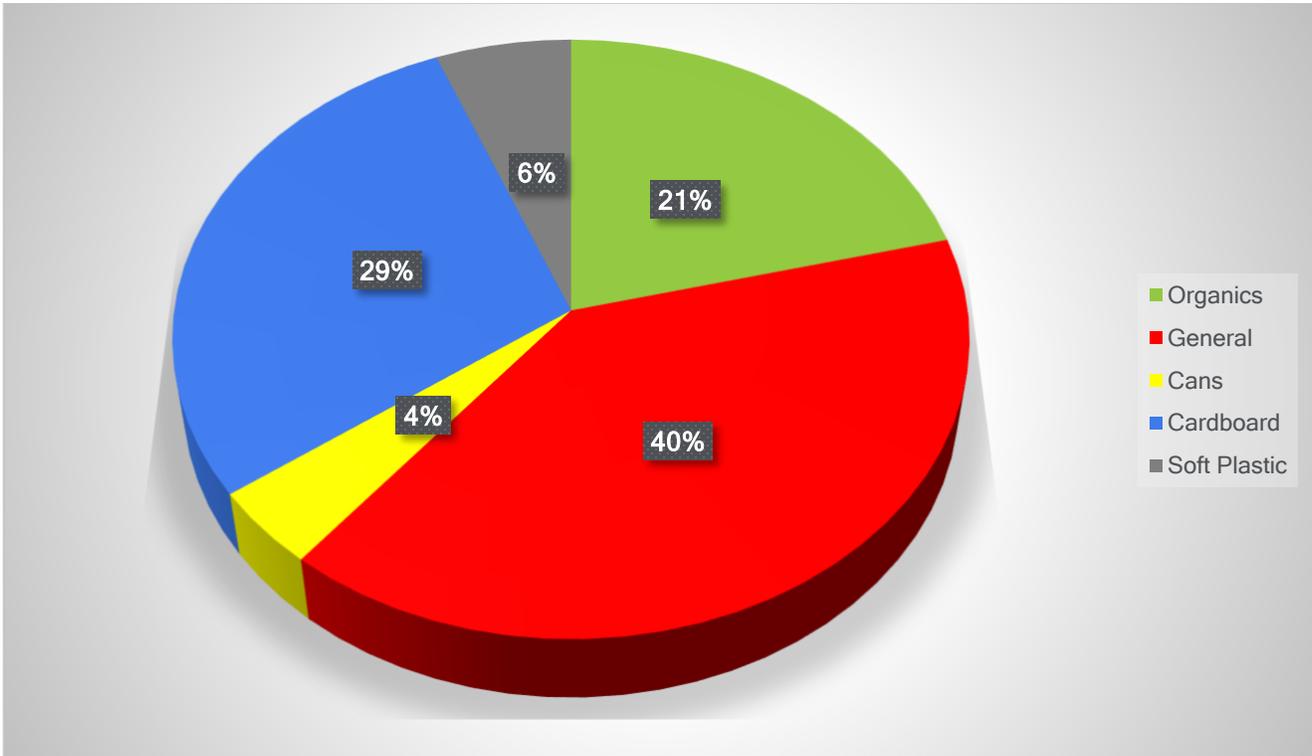


Figure 2. Breakdown of the % quantity (based on weight) of various resources sent to different recovery and waste streams, post NFC 2019.

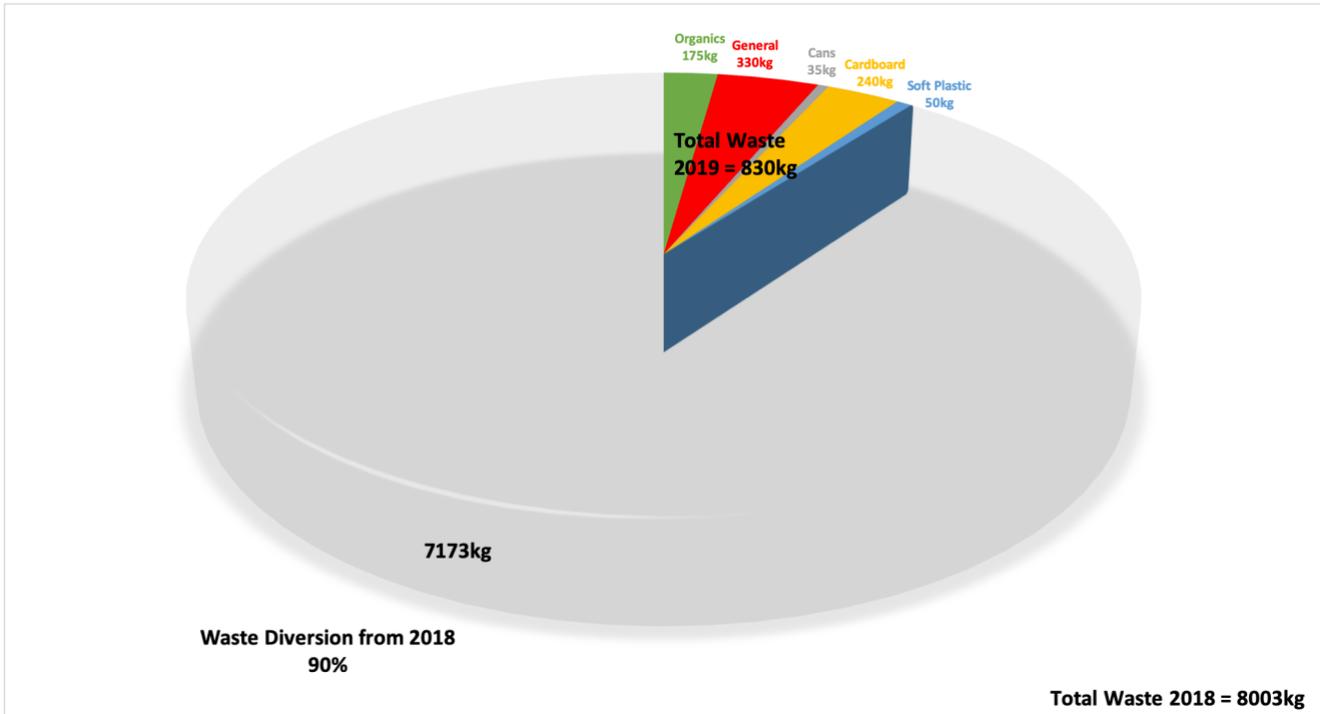


Figure 3. Comparison of the waste generated (kg) in 2018 compared to 2019 at National Celtic Festival

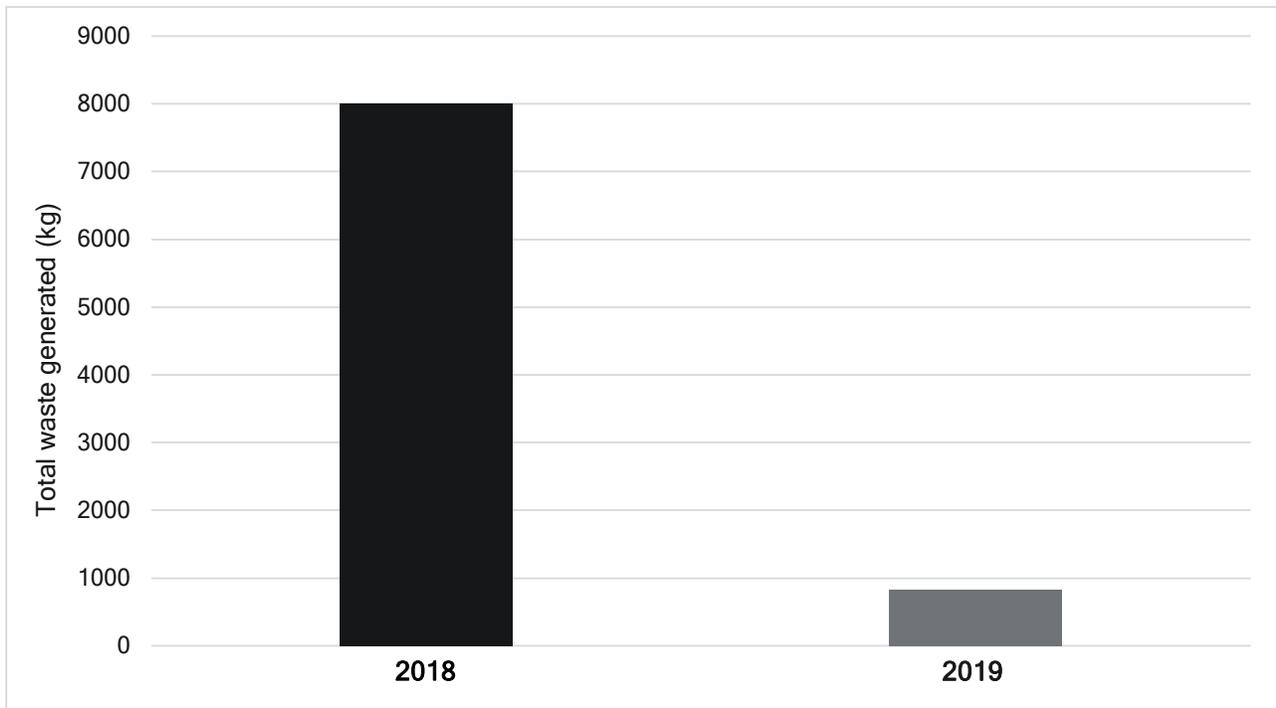


Figure 4. Total waste generated (kg) at the National Celtic Festival in 2018 and 2019.

Discussion

Upon conclusion of the NCF, we achieved 60% diversion of waste from landfill. This figure may not seem significant, and to understand the scope of the waste to come out of NCF, we must take the comparison of total waste this year compared to last year into consideration. Last year 8003kg of waste was produced (Figure 3). This year a total of 830kg was produced, where 330kg was sent to landfill and the other 500kg of various resources were recovered/repurposed (Table 1; Figure 3). That's a huge 90% reduction in waste by weight (Figure 4).

It is also important to note that before the vendors packed up, only 1x240L bin of landfill waste had been generated. Additionally, the first bin didn't have to be emptied until the 3rd day of the event.

The state of the grounds was near flawless, and little to no rubbish had to be cleaned up. Not cleaning the grounds and not frequently emptying bins meant that more time could be spent educating the public and creating impact where it was needed most.

We were able to achieve this result through our various resource recovery models and ensuring we had 4 points of decontamination:

4 POINTS OF DECONTAMINATION

- 1. Control the product stream into the festival** - By getting as many patrons as possible to engage in our reusable kit system before they reached the vendors, we were able to decrease the usage of several tons of packaging. The B-Alternative reusable kit system operated by patrons paying a \$2 rental fee when they first arrived in order to be able to use a reusable cup, bowl and spork for the entire festival. Upon paying the \$2, patrons received a 'drink ticket' and an 'eat ticket,' which they handed over at the food vendor in order to receive their meal/drink in reusable crockery. When the patron finished, they dropped their reusable kit back to either the wash station or B-Alternative station where the kit would be taken to the commercial dishwasher to be cleaned and the cycle repeated.
As a backup for those who did not want to participate in our rental system and purchase 'take away' food, we made sure all vendors had purchased 100% commercially compostable packaging. This way we had reassurance that all take away items/dining ware from vendors could be placed in the green bin and sent away to be turned into high quality compost.
- 2. Bin station decontamination** - All bin stations at NCF were staffed by Geelong Sustainability volunteer's aka. 'bin fairies' who educated the punters on what bin their waste goes in, and decontaminated waste streams at the same time. Therefore, when bins were brought to back of house, they were 90-95% decontaminated. B-Alternative staff managed the volunteers to ensure they were always in the know, and answered any questions they had.
- 3. Back of house sorting** - We were able to further sort waste streams back of house, so there was no contamination upon tipping of bins into skips.
- 4. Final check from Waste Management Company:** Corio Waste Management conducted a final check and decontamination (if any) of the compost taken away.

PLASTICS RESOURCE RECOVERY MODEL

All soft plastics to come out of NCF (and other plastics that can't be recycled) were able to be bailed up and taken away where they were melted down and molded into a building material. By utilising this model, all this plastic that was destined for landfill was turned into a resource that could be utilised by people in future years, demonstrating a closed loop system.

CARBON OFFSET

At all festivals B-Alternative consults for, we always try to minimise the carbon footprint generated at the event. For NCF the following initiatives were put in place to reduce the carbon dioxide and carbon dioxide equivalent released into the atmosphere. Carbon dioxide equivalent describes how much global warming a given type of greenhouse gas may cause, using carbon dioxide as a reference. For example, methane has a global warming potential that is 25 times greater than carbon dioxide. Therefore, we say that 1kg of methane has the same effect as 25kg of carbon dioxide equivalent (CO₂e).

RENT-A-KIT SYSTEM

At NCF, going off the difference in total waste from 2018-2019 and if we assume 50% of all waste from 2018 was packaging, we diverted ~4000kg of packaging waste from landfill, in comparison to last year (8003/2)).

This means that 19,800kg of CO₂e was saved from being released into the atmosphere and having contributed to global warming, if this packaging had of been sent to landfill. This is the equivalent of taking a Boeing 747 out of the sky for 110 hours (or roughly 6 return trips to Hawaii). Another example is not driving an average light vehicle for 108,791km (driving around Australia on the highway 7 times). This figure is quite conservative as it doesn't consider the carbon footprint of producing and transporting the packaging.

COMPOSTING FOOD AND PACKAGING

By composting food and packaging instead of throwing it in landfill, a different chemical process takes place which is beneficial for the planet.

When food and other things such as paper/cardboard (like compostable packaging), break down in landfill, they undergo a process in the absence of oxygen that releases methane into the atmosphere.

However, when food and packaging break down in the presence of oxygen in a composting system, no methane is released. Therefore, by composting, we are stopping one of the most potent GHG's from entering the atmosphere, that would contribute to global warming.

LESS WASTE MANAGEMENT COMPANY TRUCK TRANSPORT

The 90% reduction of overall waste in comparison to 2018's event meant that there was a significantly less amount of waste that had to be taken away by the waste management company. Therefore, we were able to reduce the number of trips taken by the trucks.

Additionally, by stacking bins inside bins when transporting them onsite, we were able to save 1 truck trip out and back.

Aside from reducing carbon emissions, the above strategies also save money on transport from the waste management company.

Improvements and recommendations

In order to achieve a more effective and efficient resource recovery model for NCF in years to come, the following changes are recommended:

- Implement a convenience charge system - It is recommended that vendors place a 'tax' on their packaging, whereby patrons must pay an extra \$2 if they want their food in single use packaging (per food/drink

item). This way patrons will be much more inclined to participate in the Rent-A-Kit system.

- Restructure the layout of the 'eating area'. For the convenience charge system to be most effective, it is important to note that this needs to be put in place ensuring there is ample seating and table areas to 'eat in'. By creating a clearly defined, designated eating area/arena, which is potentially barriered off, individuals will be much more likely to rent a kit and 'eat in'. As individuals enter the eating area, they can purchase their reusable kit tickets, and as they leave the area, they can drop their kits off to be washed. This way it will ensure no kits are taken by the public, and all kits can be instantly dropped at the wash station which would be positioned at the exit of the eating area.
- Include Rent-A-Kit tickets in the ticket prices. Those individuals who pre-purchase tickets to NCF receive their Rent-A-Kit tickets when they collect their wristbands for the event. This way we can guarantee those individuals will be using reusables. Therefore, we would only have to focus our attention on a smaller audience (those who just visit without purchasing a ticket) to ensure they purchase their Rent-A-Kit tickets.

VENDORS

Most vendors were extremely supportive of our reusable model, however there were a couple opposed the idea. In future, making the reusables compulsory in the vendor contracts will aid for a smoother process on site. Additionally, communicating with the vendors further in advance will allow us to make sure we can cater more accurately for the food they are serving e.g. one vendor thought that the large bowl made their serving size look smaller, and is why they opposed using the bowls.

Specifying that vendors are to take their landfill waste home with them will further decrease the overall waste dealt with at NCF, and additionally reduce the waste bill. This further helps the vendors take ownership over their waste, and will hopefully push them in the right direction to finding ways to reduce their waste.

TALENT

- It was great to see that NCF is supportive of our stage announcements, bringing awareness to the plastic pollution problems our society is facing and of the Rent-A-Kit system we had in place. In future, we will increase effort into getting the talent to make short 'Party With The Planet' shout outs, encouraging patrons to have an awesome time, but respect the planet and each other at the same time. This can be achieved by potentially asking the talent before the event, so they aren't put on the spot before their performance.

Conclusion

Overall, the B-Alternative team thoroughly enjoyed working in collaboration with Geelong Sustainability and Bellarine Catchment Network at NCF to achieve a successful event regarding resource recovery and the BA Rent-A-Kit system. All NCF staff were a pleasure to work with, and should be applauded for their management efforts. The support from Geelong Sustainability and Bellarine Catchment Network was outstanding and these excellent results couldn't have been achieved without all bodies working together.

The management from the NCF team has been very welcomed and required as they have been able to support with answers and suggestions wherever required. NCF and other events should continue to aspire to reach zero waste and becoming completely reusable. B-Alternative have proved this type of model to be financially beneficial, and a lot more environmentally sustainable than models where single use packaging is distributed. B-Alternative will make this transition for all festivals and events easy, financially viable, and most importantly an enjoyable experience.