[redacted]

ENVIRONMENTAL REPORT

[redacted]

[redacted] 2021

B-ALTERNATIVE.COM

B-Alternative

Be the change. Be alternative.

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B-Alternative wishes to acknowledge the traditional custodians of the lands on which our team members work and live, predominantly lands belonging to the Wadawurrung, Woiworung and Boonwurrung people of the Kulin nation.

We wish to pay our respects now and always to Elders past, present and future, and acknowledge that sovereignty was never ceded.

CONTENTS

WHO WE ARE

B-Alternative is an environmental solutions group shaking things up for a more sustainable, planet-positive future! We are based in Australia and are part of a global community of conservationists, environmentalists and change-makers.

We provide practical, eco-friendly solutions to everyday living to businesses, festivals, venues, schools and more. We do this by sourcing and supplying truly compostable products and packaging, raising awareness through facilitated environmentally focused conversation, conducting tailored environmental audits and consultations, and implementing regenerative resource recovery systems.

Our core pillars are **education**, **waste reduction**, and **Earth-friendly products**.

> *" NEVER BEFORE HAVE WE HAD SUCH AN AWARENESS OF WHAT WE ARE DOING TO THE PLANET, AND NEVER BEFORE HAVE WE HAD THE POWER TO DO SOMETHING ABOUT THAT "*
>
> **- SIR DAVID ATTENBOROUGH**

WHY GO ALTERNATIVE?

LIGHTER FOOTPRINT	Reduce your business' overall greenhouse gas emissions, landfill contribution, energy usage & more.
WHAT PEOPLE WANT	84% of Australians want action on climate change (Australia Talks National Survey, 2020). Take action & promote it.
INDUSTRY LEADERSHIP	Set the bar high for other businesses & help create a new norm for a transforming industry.
SMARTER SPENDING	Reducing the overall amount of waste produced typically lowers overheads. Less landfill = less $$.
SPREAD THE IMPACT	Encourage a cultural shift towards Earth care & positive behaviour change within the broader population.

"B-Alternative provide an **inspiring** and impeccable service in waste management across all facets. B-Alternative's ability to connect and empower... is extremely effective and culminates in outcomes well beyond expectations. We have **loved** working with their team and look forward to many more opportunities to collaborate!"

ANGIE POOLE
COASTAL PROJECTS COORDINATOR, BELLARINE CATCHMENT NETWORK
+ CARING FOR OUR BAYS

ENVIRONMENTAL REPORT

[redacted]

AIMS

To obtain and present an accurate view of [redacted] current waste systems in [redacted] and use this information to determine potential improvements.

To provide suggestions to improve upon [redacted] environmental systems, management and impact, directly resulted from mismanaged waste practices.

METHOD

We have used a number of methods to draw conclusions for the company's current practices:

- Analysis of billing data from current waste contractor
- Observation of what is happening on the ground at the warehouse - in offices, on the floor, outside in the waste bays, etc
- A visual waste audit to draw more accurate conclusions
- Formulation of a realistic and holistic plan to reduce impacts
- Implementation of suggestions and strategies

WASTE STREAM DATA

PLASTICS

PETROL CONSUMPTION IN POLYPROPYLENE (PP) MANUFACTURING

- PP - one litre of petrol per 0.54-0.68kg of plastic
- I.e. 100kg of plastic uses approximately **164 litres of petrol** in the production phase

ENERGY USAGE IN PP MANUFACTURING

- 80MJ (megajoules) of energy per kilogram of PP produced
- This is approximately equivalent to daily household usage of a 2-person household in a moderately stable climate year-round

ATMOSPHERIC EMISSIONS FOR THE PRODUCTION OF PP

- 1.47kg of carbon dioxide (CO_2) per kilogram of PP
- This is the equivalent of 0.0154 kg of methane
- Total = **1.86kg of CO_2e to produce 1kg of PP** (both process-related and fuel-related emissions)
- 100kg of PP production produces 186kg of CO_2e, equivalent of flying a **full Boeing 747 from Melbourne to Tasmania**

BREAKDOWN IN LANDFILL

- PP in the form of 'soft plastics' take 20-30 years to fully degrade in landfill and in this time may leach harmful chemicals into nearby waterways. Plastics can also pollute waterways and habitats if blown out of landfill, bins or trucks during transportation.
- Plastics do not contain any biodegradable carbon, therefore do not generate methane or CO_2 when landfilled. However, transportation to be landfilled results in the release of CO_2.

RECYCLING SOFT PLASTICS

- It uses **80% less greenhouse gas emissions** to create a secondary (recycled) product compared to creating the same product with virgin materials

WASTE STREAM DATA CONT.

TIMBER

PALLETS

- One standard 20-foot timber tree can make eight pallets (average 35kg each)
- Approximately 29 pallets in a tonne of timber, which equates to approximately **3.5 trees**
- Per kilogram, landfilled wood emits approximately 0.8kg CO2e. Wetter conditions can significantly increase this number.
- Discarding **one timber pallet** to landfill will release around **28kg CO2e**
- Other potential uses for wood, such as kindling, recycling, upcycling (typically untreated timber)

DATA KEY POINTS

- The manufacturing of PP is an energy intensive process - this combined with transport of plastic to landfill produces a high carbon footprint for PP lifecycle
- Considering these plastics take 20-30 years to breakdown in an aerobic environment, If they are released into the environment they are one of the most dangerous plastics to wildlife as they present a choking and entanglement hazard for decades
- They are also the least likely plastics to make it to landfill due to their light weight and ease of transport via wind.
- It is better for the environment to burn pallet timber (provided it's not treated with harmful chemicals) than to bury it as landfill. Even better than this is reusing the timber if a use can be found.

Disclaimer: This information has been gathered from the below referenced peer reviewed papers and shouldn't be treated as definitive statistics. This data is B-Alternative's best estimate and has been drawn from research papers that have thousands of citations. A lot of variability arises when calculating emissions surrounding greenhouse gases, and it is important to note that the statistics in this report will contain variability based on an array of environmental factors. Nevertheless, they are a good estimate based on what we currently know.

WASTE MANAGEMENT COST ANALYSIS

General Waste
2 x 3m Skips - collected weekly, Thursdays
@ $60.00 each
MONTHLY TOTAL $540

1 x 25m Hook Lift Skip - collected on call
@ $350.00 /collection
MONTHLY TOTAL $350
+ cost for disposal (24cents /kg) @ $650
MONTHLY TOTAL $650

28 x 240L Wheelie Bins - collected weekly
@ $8.00 each
MONTHLY TOTAL $300

Comingled Recycling
62 x 240L Wheelie Bins - collected weekly
@ $9.60each
MONTHLY TOTAL $730

Cardboard/Paper
6 x 3m Skips - collected daily if full
@ $20.25each
MONTHLY TOTAL $1000

3 x 4.5M Skips - collected daily
@ $30.45each
MONTHLY TOTAL $430

Bailer
Waste Tech Bailer - monthly rental
@ $500 / month
MONTHLY TOTAL $500

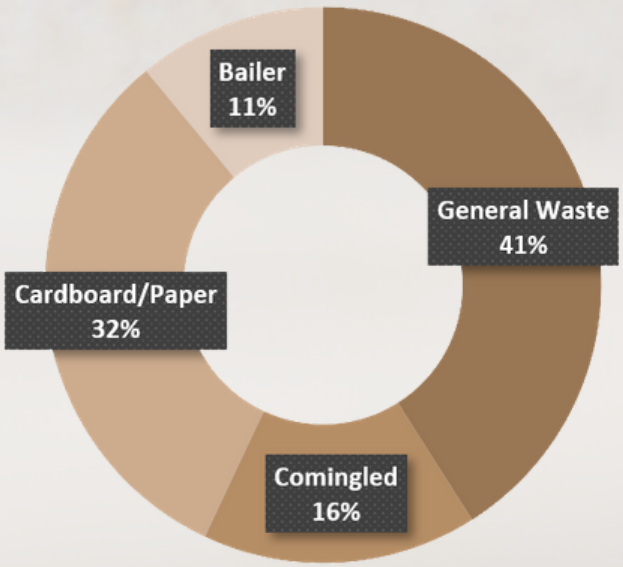
TOTAL COSTS

$4,500 per month
or **$54,000** per annum

+ bin hire fees
+ fuel levy
+ GST

BREAKDOWN BY PERCENTAGE

General Waste - **41%**
Comingled - **16%**
Cardboard/Paper - **32%**
Bailer - **11%**



RECOMMENDATIONS

1. REMOVE ALL COMINGLED BINS FROM THE SITE

- [redacted] are not currently offering a comingled service, so all contents of these bins are ending up in landfill.
- This is misleading to [redacted] staff as they think they are doing a 'good thing' by using it.
- Any bad practice like placing soft plastics in these bins is not being picked up on or regulated. This is in turn will affect how staff recycle at home or in future work places.
- It creates confusion around workplace practices.
- [redacted] would potentially be paying a rental fee on these bins from [redacted]

2. IMPLEMENT STREAMED RECYCLING ON THE FLOOR

- All work stations on the floor to have a three-streamed bin system. Blue - Paper/Cardboard; White/Black - Soft Plastics; Red - General Waste.
- These can be strategically placed around the floor to maximise efficiency and capture correct streams.
- This is a starting point and, later on, other streams could be added in certain areas of the building, e.g. organics, aluminium, glass in lunch rooms.

3. START SOFT PLASTICS RECYCLING COLLECTION

- All soft plastics captured on the floor to be collected and taken to the existing bailer.
- Soft plastics to be bailed and stored for collection - diverting from landfill.

4. ALL TIMBER TO BE SEPARATED AND COLLECTED

- Currently the largest component of the general waste is timber pallets and packing timber.
- Although a large amount of this timber is treated, there are recyclers who can take this and use appropriately.
- A specific skip for timber collection could be implemented onsite to ensure all timber is diverted from landfill free of contamination.

RECOMMENDATIONS CONT.

5. REDUCE GENERAL WASTE – BOTH FREQUENCY OF PICK UP AND SIZE OF SKIP

- With landfill levies set to rise by 60% on the 1st July 2021, this is will become the expensive component to [redacted] waste contract.
- With both soft plastics and timber being diverted from landfill, we would predict that [redacted] **general waste would decrease by up to 90%.**

6. MONITOR AND REASSESS ONCE CLEARER UNDERSTANDING HAS BEEN REACHED

- Once these changes have been implemented, a clearer understanding of the actuals will be become apparent.
- Continual monitoring and assessment over time will ensure the best possible practices with the least environmental impacts are implemented.

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