Bin Materials Audit

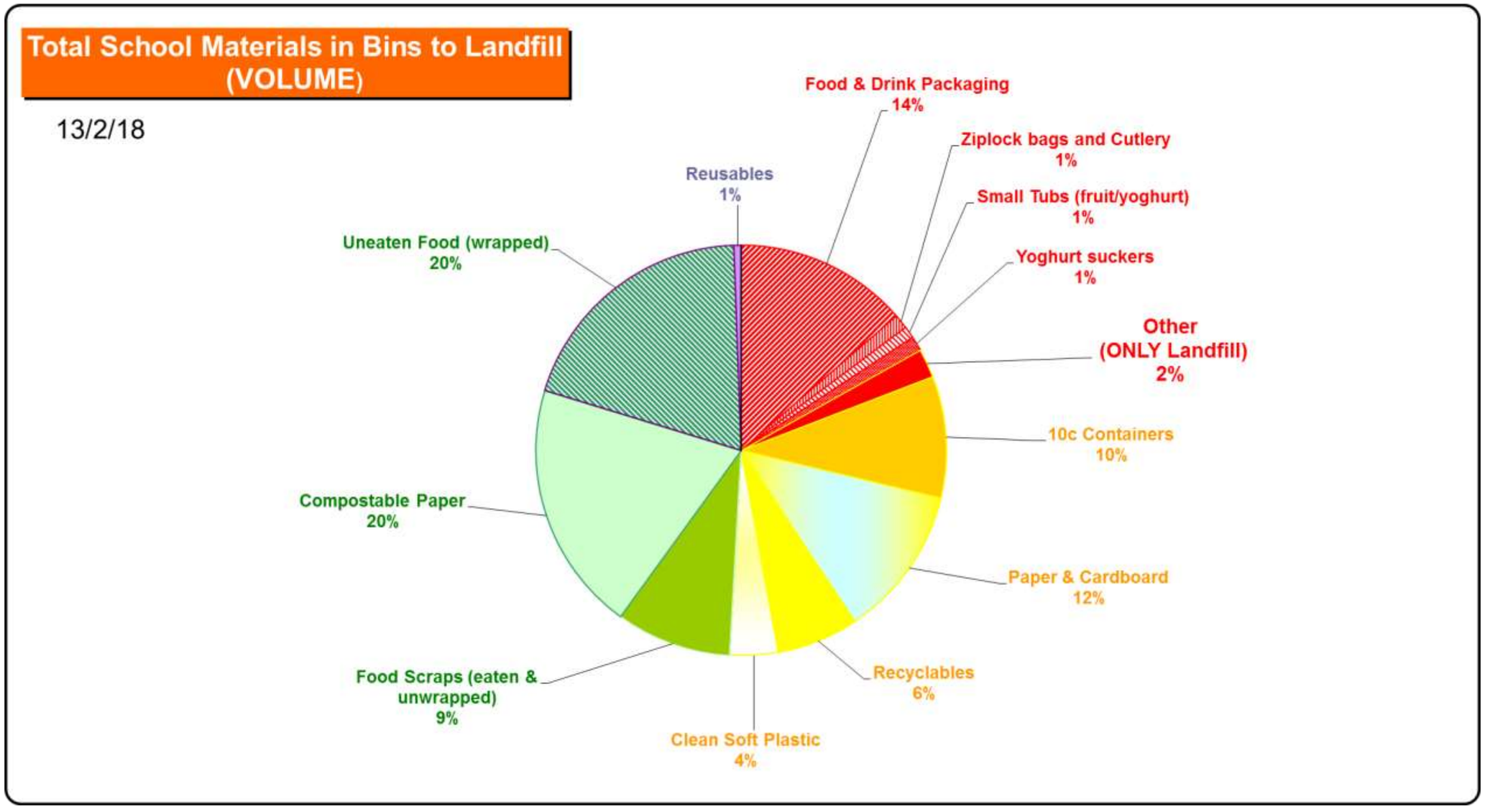
Largs Bay Primary School

13 February 2018

Currently **264 Litres** per day are going to landfill for 615 people

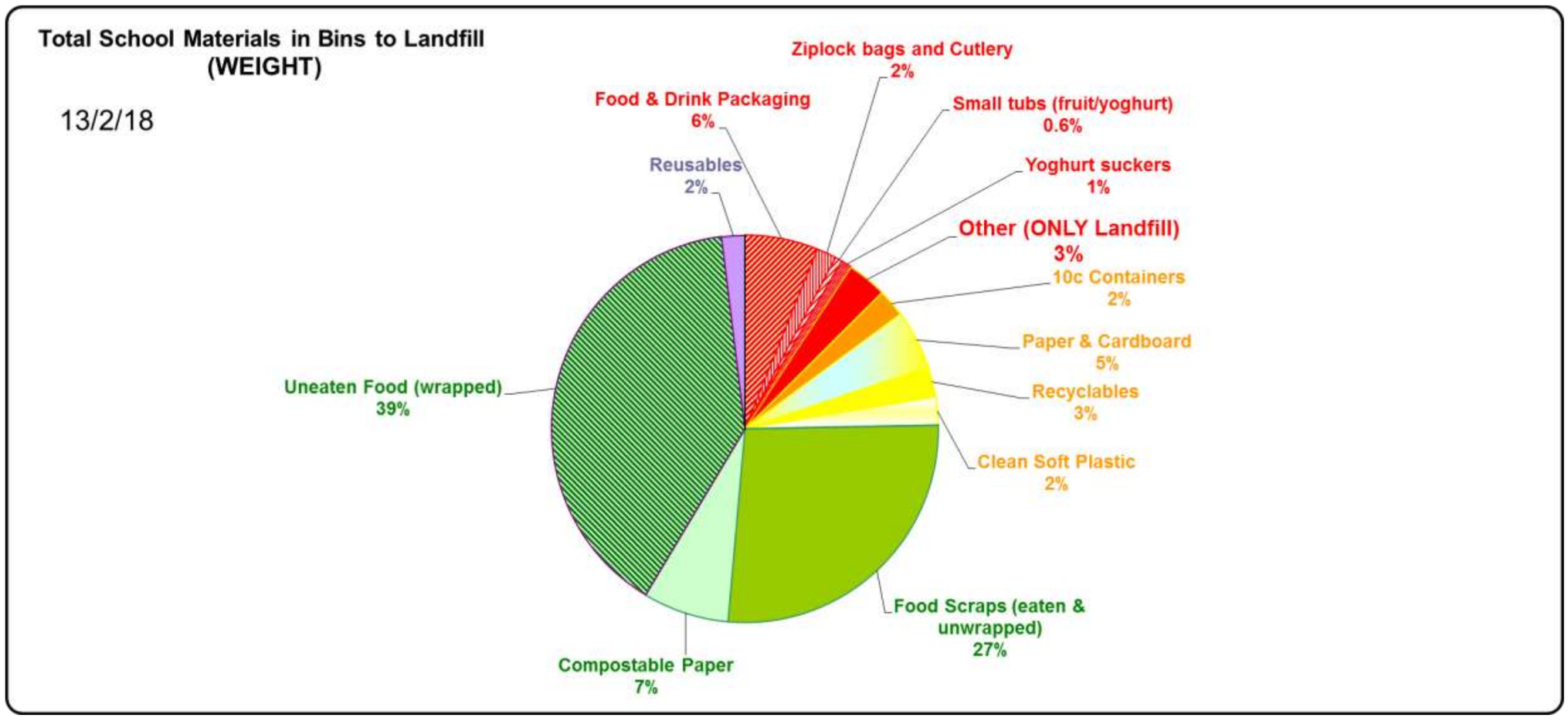
This is equivalent to **0.429 Litres** per person per day.

HOWEVER – only **6 Litres** HAS to go to landfill. By **reducing**, **reusing** and **recycling** Largs Bay **could reduce their waste to landfill by 98%.**



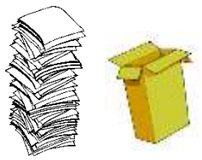
During a WOW audit, the materials are measured by volume and weight. Often information relating to landfill, recycling and resource recovery is reported by weight, as this is how we pay for landfill in metropolitan areas. We believe that volume is a more useful measure for education sites as this determines how many bins are required and also how much space in the landfill the materials will take up. Throughout this report, the volume measure is more prominent; however the weight is referred to in a few cases. The raw data and excel tables and charts can also be sent to your site. These can be used for additional classroom learning opportunities, such as a comparison and discussion around units of measurement and specifically the weight and volume.

The table below indicates the materials found in bins, by WEIGHT. While we don't CURRENTLY consider this to be as useful a unit of measurement for sites (this may change as the increased landfill levy may affect the way sites are charged for collections). Comparing heavy items (e.g. food scraps) with their equivalent volume can be particularly dramatic! This may then prompt the question: which unit of measurement provides us with the most useful information? This is a very important factor in developing experiments and surveys. This could also be applied to information about recycling (e.g. some councils have high recycling rates- by weight- as they may generate more glass items than other areas which may have a higher volume due to more plastics and cardboard). Several follow up activities are available here. You could do weight vs volume recycling activities as homework or between classes or areas of your site.



Recyclable Materials - 84 L, 4 kg per day, 32% of the total volume of materials to landfill

84 Litres of recyclable materials could be recovered from the landfill bins.
Recyclable materials are things that could be reprocessed and turned into products again, instead of going to landfill.



Paper/Cardboard

31 L per day
which makes up
12% of the total
volume of materials in the landfill bins.

10c Containers

40 containers per day
= $4.00/day
In a year you could raise
$800

Clean Soft Plastic

This mostly comes from libraries, canteens and offices.
10 L was found in the landfill bins.

Recyclables

Commonly found in OSHC, school canteens, home economics areas, and staff rooms where there is access to water for rinsing. **17 L**, making up **6%** of the total **volume** of materials in landfill bins was found.

Electrical Materials

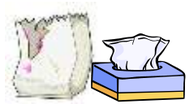
This is a growing global issue. Electrical materials should be disposed of correctly and safely.

Compostable Materials - 128 L, 26 kg per day, 49% of the total volume of materials to landfill

128 Litres and **73% of the total weight** were potentially compostable items and could be recovered from landfill bins.
Compostable items are things that once grew and can be returned to the earth as compost to help more things grow.
The type of composting system and ability to compost on site will depend on the size of your site and conditions specific to your area.

Food Scraps

24 L of the landfill bins were food scraps - **9%** of the total **volume** of materials in landfill bins. However, food scraps are some of the heaviest landfill items, weighing in at **9 kg - 27%** of total **weight.**



Compostable Paper

This consists of paper towel, tissues and paper bags.
52 L per day = 20% of total **volume**.

Garden Material

0 L of garden materials were in the landfill bins.

Uneaten Food

52 L, 14 kg was in the landfill bins, often still wrapped or in a packet. This was **20%** of the total **volume** of landfill bins. Ideally this would be significantly **reduced.**

Recycling

Paper/Cardboard recycling: **12% is below the average (20%) for paper/card** found in landfill bins, which shows your paper/cardboard recycling is going well. However, 5000 L of paper/card are going to landfill rather than being recycled each year (about 21 wheelie bins/yr). Regular reminders to both staff and students, ensuring paper recycling bins are provided next to all office bins, and containers are consistent in all rooms will help further reduce this stream.

10c Containers: **40 containers were found in landfill bins**. This is over **$800/yr,** which could be well worth collecting. Clear pictorial signage on the 10c collection containers and placing a container next to every landfill bin will help maximise collection, plus regular reminders in newsletters. Integrating 10c bin signage and container design into the arts and technology curriculum areas will also encourage student ownership and increase the success of new systems.

Clean Soft Plastic: Based on the audit day results, this **is 2 000 L/year**. Most of this material appeared to be from the canteen. This can be collected to take to local supermarket collections to be made into recycled plastic furniture and boardwalks- a better option than sending plastic to landfill.

Recyclables: Items from the staff room, OSHC and canteen are the ONLY areas we recommend collecting these from, as there is opportunity to rinse or wipe out containers to ensure they are empty and dry enough for recycling. A lot of recyclable items coming out of the canteen and staff room, and we strongly recommend setting up recycling bins in both areas.

Electrical Materials: It is important to be aware of safe disposal methods as **Electrical items (anything with a battery or cord) and Fluoro tubes are banned from landfill and MUST NOT go into school skips or bins. For more information on e-materials disposal see the EPA website.**
Fines from $300 to $30 000 can apply for inappropriate disposal.

Composting

Food Scraps: **9% is below the average figure of 13%,** again demonstrating the compost bins in classrooms are having an impact. **However, 120 L/week (47 kg/week) of food scraps are still going into landfill bins**. Make sure every classroom (and the canteen) has a food scrap bin which is clearly labelled, and regularly remind staff (and students) to use these bins for any organic material. Some of these could be moved outside during recess/ lunch so students who take food out with them have somewhere for the scraps (about half the food scraps came from outdoor bins).

Compostable Paper: 20% is above the average 15% for schools. This is about 260 L/week, which could be collected for composting instead. Encourage students to put all lunch order bags, handtowels and tissues in their classroom compost bin. There was also a significant amount of paper handtowel from the staff toilets. This could easily be collected and transferred directly into the green bins rather than landfill. To make it easier for cleaners, make sure these bins are **unlined** and have a sign indicating where the contents should go.

The combined volume of food scraps and compostable paper per week- is 380 L, weighing 60 kg (this is excluding what you are already diverting to your council green bins). Given the volume of compostable material your site is generating, it might be worth getting a 660L organics skip. Commercial collections are approx. $10-15/240L bin collection and around $25-30/660L skip- which could be collected once a week and could reduce your more expensive landfill collection costs.

Uneaten Food: 20% is well above to the average of 7%. This included the equivalent of *40 sandwiches, 13 apples, 2 bananas, carrot and celery sticks, grapes, 12 half-finished popcorn bags, 20 packets of crackers/ cookies, 5 Le Snak packs, 7 muesli bars, 5 muffins, 10 canteen meals,5 yogurt squeezies, 5 milk/ juice containers and a tub of yogurt.*

Over a year, this is about $24 400 families are collectively wasting on uneaten food!

Given the quantity of uneaten food, this is definitely something worth discussing with families, at assemblies and in class. Encourage students to take home uneaten food and have discussions with their families about how much/ what they want to eat in a day. Discuss with students about packing their own lunches (for those old enough) to ensure that what they like to eat at school and the right quantities are in their lunchbox.

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Reusable Materials – 2 L, 1 kg,
1% of the total volume of materials to landfill

Reusables are items that could be used again before disposal, and are often things that shouldn't have ended up in the landfill bins to start with!

2 L of reusable items were found in the audit.

This included:

Pens, folders, toys, a water bottle and container

Reusing

Reusables: The items that were found could be easily reused by having a communal storage area, where reusable items can be placed and shared amongst staff/all school attendees. This can have cost savings for the school in the materials purchased - for example, saving pencils and resharpening them means less need to be purchased each year.

Single-sided Paper: Because paper is a big budget item for education sites, it is important to try and use both sides of suitable paper before recycling to make the most of this valuable resource.
Ensure all computers on site are set to print double-sided as default.

Reducable Materials - 51 L, 4 kg,
17% of the total volume of materials to landfill

Items in the 'Reducing' Category currently have no easy way to be managed in a school environment. Many of the things such as food and drink packaging can be avoided or sent back home to reduce the amount of materials going to landfill from your site.
This also includes the category of **'other' – in an ideal situation, 'other' is the ONLY material that would be going to landfill.**

Food and Drink Packaging

42 L per day = 8 300 L a year or 35 wheelie bins. It is **14% of the total volume of materials in landfill bins.**

As these items can't be recycled, reducing their use is the best option!

Ziplock Bags & Cutlery

160 ziplock bags per day were found. This equates to **32 000/yr**, or around **$1 600** of ziplock bags each year!

There were **10 pieces** of disposable **cutlery= 2 000/year.**

Small Tubs & suckers

There were 20 tubs in the landfill bins. This equates to 4 000/year

And **29 yoghurt suckers** a day, which equates to **5 800/year**

Combined, this is more than $7 000 per year going to landfill.

Other

Only **6L** of material could not be reduced, reused, recycled or composted was sent to landfill.

This is just **2%** of what is currently going to landfill.

Reducing

Food and Drink Packaging, Ziplock Bags & Cutlery, Small Tubs:
17% of your landfill bins was food and drink packaging, ziplocks, tubs and yogurt squeezies. This could be reduced by encouraging *Wipe Out Waste* or *Nude Food* days and trying the *Less to Landfill Challenge* across the school. There were a number of straws and slushie spoons in the landfill, presumably from the canteen. Consider alternatives to these, such as bio- compostable straws (or encouraging students not to use them at all!). Reducing and avoiding packaging also links well with healthy eating strategies in consultation with parents.

Families could collectively save more than $8 600/year by reducing packaging and buying in bulk!

For long-term reduction of packaging, education and support for parents is essential so that families are responsible for their own packaging. We suggest **sharing audit results with students and families** through newsletter articles, discussions at assembly, or new student information packs, and involving them in any changes your school decides to make.

Several sites have removed outdoor bins for students and staff, placing the onus on individuals to take personal responsibility for excess materials they create, and **saving significantly on time spent by staff emptying bins as well as school $$ spent on collection and disposal of these materials!**

Other: In an ideal situation where items are reduced, reused, recycled or composted there is very little material that MUST go to landfill. This is a long term goal to aim for which can provide a range of contextual learning opportunities and cost savings for the site. You could easily become a Zero Waste Bin free school within the next 2 years!

Note: A lot of the 'other' material was laminated paper sheets. Once laminated, paper cannot be recycled and MUST go to landfill. Try to avoid lamination unless the sheet is going to be used for a long time!

Currently, the equivalent of 220 wheelie bins (240L/bin) a year are going to landfill. However, with 'ideal' collection and avoidance systems in place, the total daily volume of material to landfill for the entire school could be around

6 L per day = 300 L per term = 1200 L per year – or just 5 wheelie bins per year!

This is a great long term goal to strive for, and some sites have reduced their material to landfill by more than half after conducting a bin audit. This can also deliver significant cost savings for the school and is worth discussing with finance staff.

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Your site compared to State Average

When comparing between sites, a per person per day (pppd) measure is used. This allows a degree of normalisation for sites of differing sizes.
A brief comparison is shown in the table below - see the data sheets for more detailed data.

	Largs Bay Primary School 2014	Largs Bay Primary School 2018	Average of all SA Primary Sites (n=232)
Recyclables stream	0.12	0.14	0.19
Compostables stream	0.23	0.21	0.22
Reusables stream	0.02	0.00	0.03
Landfill stream	0.12	0.08	0.17
Total Material Audited	**0.49**	**0.43**	**0.61**

Overall, based on a per person measure of total materials audited, Largs Bay Primary School is **below** the state average and below the 2014 audit results. This amount could be further reduced by following some of the recommendations made for resource recovery and waste reduction.

Collectively, families can save close to $33 000/yr by changing packaging habits and encouraging uneaten food to be taken home!

Please ensure that your site makes contact with the council Community Waste Project Officer: **Alex Mutiso** (alex.mutiso@portenf.sa.gov.au)

And NRM Education staff, particularly if you are a Sustainable School site, as they can support you with engaging staff, linking to a School Environmental Management Plan- SEMP. Your contact is **Amy Baylock** (amy_b@kesab.asn.au)

For more information, questions or queries, please contact KESAB.

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Summary of Recommendations

Composting - 49% of the total volume

Uneaten food: Given the volume of uneaten food at the school (and the amount of money families are wasting!), we strongly recommend having classroom/ assembly discussions with students about the environmental impacts of food waste and working with students and families to try and reduce how much food is going to landfill. It might be worth looking into ways students can access their lunchbox during playtime- many mentioned they threw away food because they didn't want to finish it but didn't have anywhere to put it when they were in the yard. There was also quite a lot of food from the canteen which was presumably left over at the end of the day, which in future could at least go to compost.

Compostable material: Speaking to students during the audit, not everyone had easy access to a compost bin, or was aware of it if they did. To increase the effectiveness of your compost collection, ensure **every classroom has a clearly labelled compost bin which students are continually reminded about**. A handy way of getting them to think about what to put in the compost bin is '*If it grows, it goes'*! Consider either setting up outdoor collections, or just moving some of the compost caddies outside for students to use during play times.

Given the volume of potentially compostable material your site is generating, it may be more than you can fit in your council organics bins. Talk to contractors (we suggest getting a few quotes) about organic skip collections. These are much cheaper than landfill collections and since **compostable material is 50% of your current landfill, you may be able to reduce your landfill collection frequency and save a fair bit of money!**

Recycling - 32% of the total volume

Paper/ cardboard: There was less paper/ card in the landfill bins than the average Primary site, however this can be further reduced by regularly reminding staff and students to use the paper/card recycling bins, reusing paper when possible (e.g. using the other side for drafts/ drawing) and **setting all the printers onsite to double-sided as the default**.

Mixed recyclables: The recyclables from the canteen, OSHC and staff rooms can be collected and put into your council recycling bin. Make sure there is a clearly labelled recycling bin in each appropriate room and staff are reminded to use them.

10c: Putting labels or signs on your crates for 10c collection will help make it clearer to students what they are for. Also consider having 10c collection containers in classrooms (about half the 10c containers in landfill were from indoor bins).

Reducing - 17% of the total volume

Food and Drink Packaging, Ziplock Bags & Cutlery, Small Tubs:
Aim to reduce packaging by having regular (monthly or weekly) *Nude Food* days and trying the *Less to Landfill Challenge* in classes. Discuss packaging issues in class (useful resources include Cool Australia and WOW resources). We also recommend watching the *War on Waste* in class (the website has a handbook which links to the Australian curriculum). Try holding challenges in class to see who can go the longest without a ziplock bag/ yogurt squeezie, and discourage families from purchasing them (newsletter articles may be one way to do this). Offer alternative options instead (reusable containers, not taking yogurt to school, etc.). You may like to organise beeswax wrap making sessions so students can make their own non-plastic alternatives to cling-wrap, or offer discounted reusable containers from the front office/ canteen. Reducing packaging links well with healthy eating strategies and both families and the school can save money long-term, so it's definitely worth trying!

Other recommendations

You currently have far more outdoor bins than you need. Consider removing some of these, and instead ensuring every outdoor bin has a 10c container attached.
We also strongly recommend removing all under-desk staff bins (although this may not be very popular with staff). You are currently going through 15 white bin liners per day (3 000/ year), just to line individual staff bins. Most of these had only a few things inside, most of which were either compostable or recyclable. By removing these bins, you would save the school about $200 in liners (through your cleaning contract), setting a good example to the students and encouraging staff to get up periodically from their desks! Alternately, you could get desk cube bins (landfill and organic), which staff could empty themselves at the end of each day.

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From the top left, clockwise: One day's worth of- ziplock bags (160), food and drink packaging, uneaten food, white indoor bag liners (15), total compostable material, resuable material and **'other' (the only material that HAD to go to landfill)**, yogurt squeezies (29) and small tubs (20) and clean soft plastic (that could be recycled at supermarkets.
10c containers, mixed recycling and paper and cardboard not pictured.

All material was from landfill bins in the 12th of February (audit conducted on the 13th of February 2018).