

WASTE AT IGS

SGP Part 5 -
Full Report

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Introduction

Topic

Waste management in Australia has experienced increased attention in recent years. Public awareness of environmental issues has been driven by media coverage such as the ABC's War on Waste, the recycling crisis and Government responses such the National Waste Policy Action Plan.

International Grammar School (IGS) is an independent coeducational school in Ultimo that is striving to improve its sustainability through the newly developed Sustainability Framework. However, it has not, until recently, closely examined its waste management and its effects on the community. Waste is a topic of contention at the school amongst its various stakeholders. This Senior Geography Project (SGP) aims to address the issues of waste at IGS and how they can properly be addressed.

Location

International Grammar School is located in the heart of Ultimo (see Figure 1), on the land of the Gadigal people of the Eora Nation. The central campus, the Reg St Leon Building, is situated on Kelly Street, and contains bridges to two other buildings - the Global Learning Centre and the Wright Building. Some of these buildings are owned by the school and some are rented. The senior high school campus, the Fusion Building, is on Mountain Street, adjacent to the central buildings. With a flexi-campus pass, students from year 10 and above can leave the campus at recess and lunch times to go to venues such as Broadway Shopping Centre, The Quadrant, and areas of Parramatta Road. The final campus is the recently established Art Studio, directly opposite the Global Learning Centre. Together, these buildings provide education, after school care, and activities for over 1000 students from preschool to year 12, and around 60 teachers.

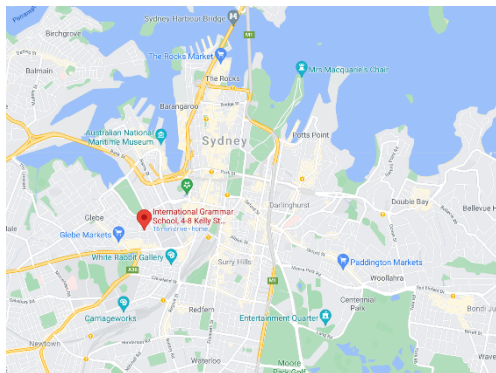


Figure 1 IGS in relation to the rest of Ultimo

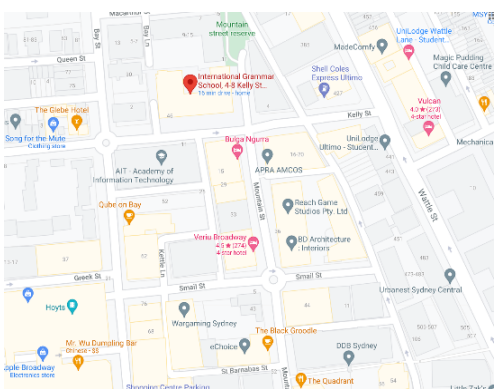
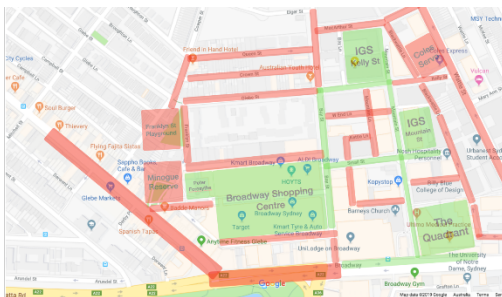
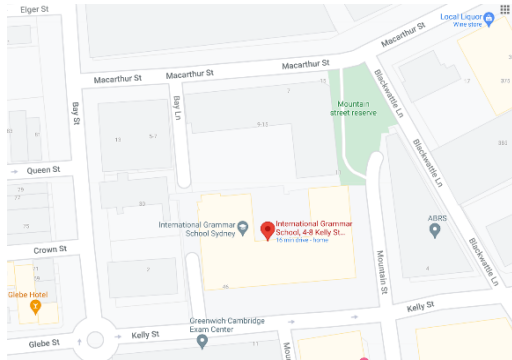
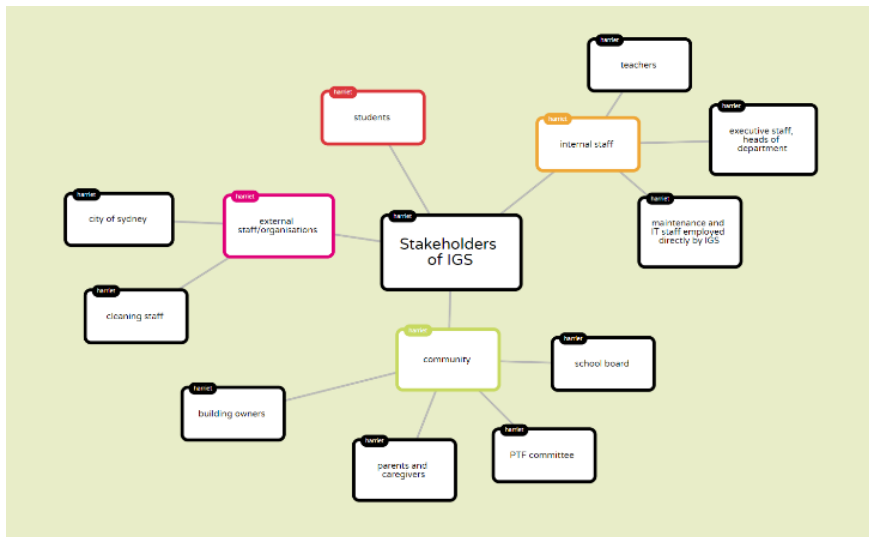


Figure 3 IGS and surrounding businesses



Scope

This report centres the waste produced by IGS, and includes perspectives of students, teachers, cleaners, maintenance workers, and canteen staff. It does not aim to include the ecological implications of students' waste produced outside of school property. It does not include areas in flex-campus zones such as at the Quadrant or Broadway (Figure 2). It does, however, aim to outline the roles and responsibilities of various members of the IGS community in the production and reduction of waste.



Overview

This SGP aims to research waste at IGS in order to improve on our current ecological footprint.

This research was organised under the following inquiries:

Inquiry 1: Explore the nature of waste at IGS

Inquiry 2: Explain the impacts of waste at IGS

Inquiry 3: Evaluate strategies to address waste at IGS

To answer these questions, research was conducted through a range of primary and secondary methodologies, including:

Primary Research:

- Photographs
- Interviews
- Questionnaire
- Waste Audit

Secondary Research:

- Council Reports
- Websites/Digital Articles

- Videos and Documentaries



Figure 5 Photo taken at the IGS Waste Audit of uneaten and completely edible food that was thrown out. Taken Wednesday 11th November 2020.

Aims and Hypotheses

Inquiry 1	Hypothesis
Explore the nature of waste at IGS	<p>IGS produces more waste per capita than necessary – this consumption is higher than that of other schools. Waste is a big issue with the IGS community, disproportionately so with primary school students. Waste produced is in two main categories – paper recycling, and food waste. This will most likely be reflected in a waste audit of IGS – however, it is probable that high school will also produce a high volume of waste due to off-campus lunchtimes.</p> <p>How is waste produced?</p> <ul style="list-style-type: none"> • Food packaging • Use of plastic and packaging at the school canteen • Disregard for school sustainability • Single-use bags and other packaging <p>What types of waste are produced?</p> <ul style="list-style-type: none"> • Food waste • Plastic packaging from food • School canteen packaging (eg. Food tubs, drink bottles, paper bags)

	<ul style="list-style-type: none"> ● Plastic bags <p>Who produces the waste?</p> <p>Waste is primarily produced by students rather than teachers or parents – primary school produces a lot more food waste and wrappers. However, due to off-campus lunchtimes, high school will also produce waste from food packaging, but not as much food waste.</p> <p>How is it managed?</p> <p>Waste is poorly managed and bins are not clearly labelled or allocated around the school. There are not enough bins, and they are often inaccessible and it is made difficult to ensure that your rubbish is going to the right place.</p>
Inquiry 2	Hypothesis
Explain the impacts of waste at IGS	<p>Waste at IGS has a significant negative impact on the environment. This is due to: proximity to a shopping centre and other restaurants/cafes</p> <ul style="list-style-type: none"> ● lack of clear labelling on bins ● disregard for the impacts of waste ● misuse and overuse of plastic and paper products within the school ● food waste <p>Environmental Impacts</p> <ul style="list-style-type: none"> ● blocking storm water drains ● contamination of plants and soil ● increased waste in landfill ● food waste rather than composting leads to further environmental degradation ● large carbon footprint ● contribution to climate change <p>Social Impacts</p> <ul style="list-style-type: none"> ● Distrust for school systems ● Issues with the culture of the school ● Students believe that the issue cannot be fixed and that the problems lie with the cleaners

	<ul style="list-style-type: none"> • Staff have started to reduce efforts for waste management due to all rubbish being put into the same bin • Cleaners say that they put all rubbish in the same bin due to student ignorance regarding the sorting of bins <p>Economic Impacts</p> <ul style="list-style-type: none"> • Waste management consumes much of Sustainable Futures' budget • Huge amounts of money spent on ineffective waste management systems including bins, posters, initiatives, and cleaners • Misuse of budget
Inquiry 3	Hypothesis
Evaluate strategies to address waste at IGS	<p>The strategies that work best will be the ones that encourage students, teachers, and parents to be involved in creating a culture of sustainability at IGS. This could include:</p> <p>Actions from individuals</p> <ul style="list-style-type: none"> • reducing their own waste • recycling and reusing materials and resources • joining Sustainable futures <p>Actions from groups – IGS and Sustainable Futures</p> <ul style="list-style-type: none"> • continuation of Sustainability Club • school-wide initiatives • parent newsletters and information following a school-wide waste audit • labelling of waste bins • re-organising bins around the school <p>Actions from government</p> <ul style="list-style-type: none"> • increase funding to school sustainability programs

	<ul style="list-style-type: none"> ● assist schools and institutions to develop sustainable practices through community and resources ● develop national, state-wide and city-wide programs for sustainability in schools and institutions ● universalise waste programs
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Methodology

A variety of primary and secondary research methods was used in order to obtain accurate information about the management of waste at IGS.

Primary data was collected from a wide variety of sources to incorporate all demographics within the school community.

This was specifically relevant when creating the **survey** – students willing to fill out the form in their own time, students in some classes, students in detention, staff and parents completed the survey, meaning that more people had their voices heard within the IGS community.

The main collection of data from around the school was the **Waste Audit** in 2020 – this gave information on the types, weight, and impact of waste consumed. This gave a base level from which to improve, and increased understanding of which strategies would work best to manage waste at IGS.

Interviews were also carried out throughout the school – all staff relevant to managing waste were contacted, including the Head of Facilities, Head Cleaner, Cleaning Staff, Students, Sustainable Futures members, and the Head of Sustainability. Executive staff were consulted, including the Deputy Head of High School and the School Principal.

Photos provide a clear, visual explanation of the waste at IGS, and allow for an idea of how waste impacts the aesthetic value of areas around the school.

Secondary sources were used for comparisons between schools and analysis of data.

Council Reports outlined strategies and data surrounding waste, and how sustainable education can be implemented in schools from primary school.

Websites, a broad category, contained general information; they gave insights into the impacts of waste in schools and at different levels (ie. school, state and national levels). The websites sourced included strategies adopted by other Australian schools.

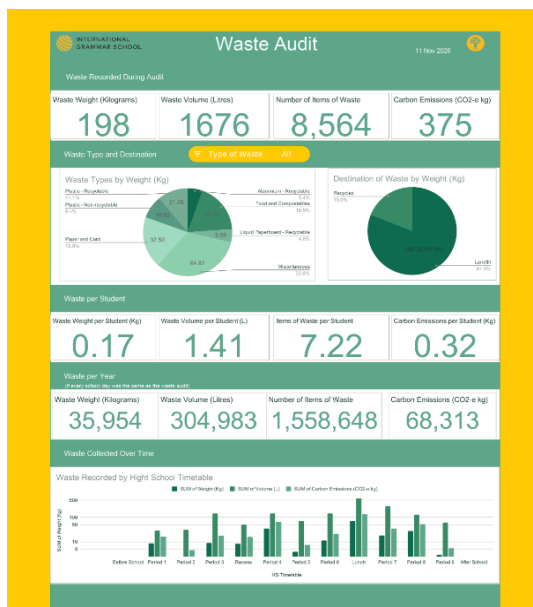
The War on Waste **documentary** provided an outline of how a waste audit could be carried out at IGS, and how this information could be used to develop strategies that include all members of the IGS community in reducing waste.

IGS News Articles provide IGS-based data and reporting on waste and its' implications and includes student perspectives on waste and sustainability.

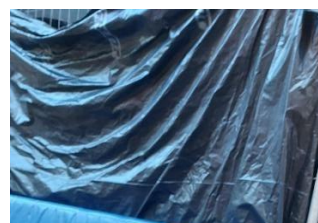
Findings

Inquiry 1: Explore the nature of waste at IGS

Sustainability is one of IGS's three strategic aspirations; however, improvement in waste management is necessary if the school is to achieve a sustainable future.



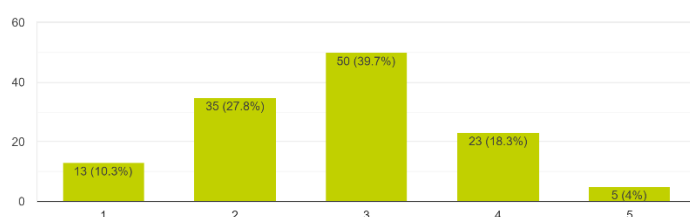
According to the school's 2020 Waste Audit, IGS students produce around seven items of waste each, daily, amounting to over *1.5 million* items schoolwide annually (see Figure 6). Larger items such as furniture and equipment are also periodically discarded as a result of school activities (see Figure 7), degrading the environment of the school.



Opinions on the nature of waste at IGS differ between staff, teachers and students. Head of Maintenance Pramod Mainali outlines that “we [the IGS community] try to make the school sustainable in a different way,” and IGS Head of Canteen Patricia Anthony enforces the idea that IGS places a focus on sustainability.

There are **two central ideas** about the nature of waste at IGS. One approach centres students as the core cause of waste mismanagement and the other positions the cleaning staff as holding a central responsibility. Across these two perspectives lie overlapping beliefs on the importance and management of cultural change to enact physical change. Figure 4 represents this mixed idea of IGS’s sustainability, proving the scattered nature of concerns of waste amongst the school community.

Do you believe that IGS manages waste sustainably?
126 responses

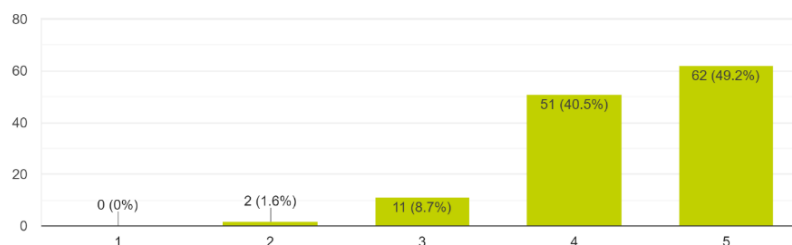


One idea is that **students are largely to blame for the waste produced** – that IGS has resources to reduce our consumption, and that these resources are being misused by the student population. Many staff responded to interviews and surveys with comments such as “it is difficult for the kids to follow through” (Patricia

Anthony in 2021 interview), emphasising that “if we don’t educate when the kids are young, they won’t follow through in the next phase of life.” Students are positioned as responsible for the issues of waste management at the school even by other students, who say “I think we need to be more vigilant about using our bins and using the correct one” (Year 12 student) – many seem to reject the idea that cleaners should be held entirely responsible for the issues of waste.

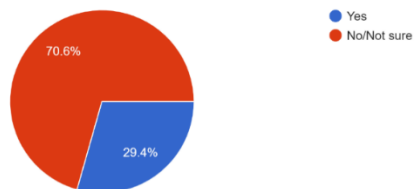
Another idea, common largely amongst students, is that **cleaners are responsible for waste issues** at IGS. Just 4% of survey respondents agreed that IGS manages waste sustainably – 10.3% strongly disagreed (Figure 8). One teacher stated,

How important is sustainable waste management to you
126 responses



in the same survey, that “even the items we do place in recycling bins - I don't believe that it does end up in recycling in the end.” While comments such as “I see waste from the paper bins being tipped into all one bin by the cleaners” (High School teacher) can be interpreted as simply blaming the cleaners, they also speak to the **larger cultural issue** of waste and sustainability at IGS. There is a clear disparity in understanding – many students care about sustainable waste management, as seen in figure 7, but many also are unaware of initiatives aiming to prioritise cultural shifts in the school (figure 9). Students, in particular, notice that there is an issue of waste management, but often do not take responsibility for their own consumption and carbon footprint.

Have you noticed any changes, in terms of waste management, at the school in the past year?
126 responses



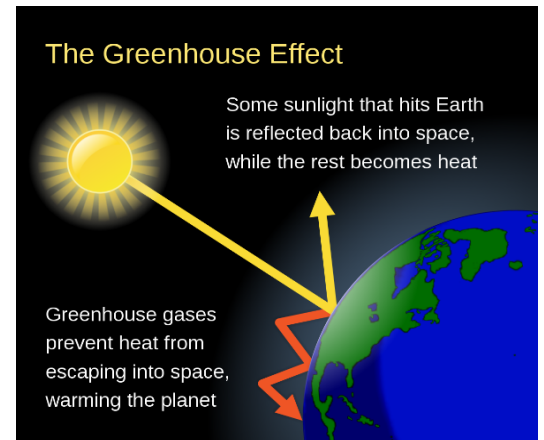
Survey responses prove general awareness of the negative impacts of our waste, with 42% of 126 respondents claiming that IGS's waste has a negative environmental impact. When we consider that IGS produces 1.56 million items of waste annually just through

classroom and playground bins, we can recognise that this statement holds truth. Only 19% of waste is recycled (figure 5), and non-recycled waste – 81% - ends up in landfill, rather than the 'yellow bin' commingled service. Such a service would sort rubbish after collection from the school, recommended by both the Head of Sustainability and an external sustainability auditor. It is clear that waste is a significant issue at IGS – the questions now are how this manifests and how it can be resolved.

Inquiry 2: Explain the impacts of waste at IGS

The IGS school-wide waste audit shone a light on the true amount of waste that we produce, allowing students to see firsthand how our waste impacts the world around us.

The report given to Sustainable Futures members and other students after the audit reads that the “many negative impacts of landfill” include “toxins leeching into our soil and waterways and greenhouse gas emissions.” The average IGS student produces 0.32 kilograms of carbon emissions per day, just through waste consumed at school (Figure 4), culminating to over 68 thousand kilograms – 6.8 tonnes – of CO₂ per year.



A key impact of improving sustainability in the school is cost. Patricia Anthony, Manager of the IGS Canteen, has been gradually improving sustainability in her position, but notes that “the more sustainable the packaging, the more it costs for us”. For the canteen, it is difficult to maintain such an expense when “everything still goes to landfill.” Without a visible effort by students, external businesses such as cleaners and the canteen say that they are less enthusiastic about shouldering the cost in both time and money to cover the waste issue that IGS creates.

Social impacts of waste include the perspectives, ideas and commitments of everyone from students to communities on a national scale. While many impacts of waste are negative, Head of Maintenance Pramod Mailani emphasises the positive, saying that effective strategies and education can mean “people thinking they are part of the solution” to sustainability at IGS and on a wider scale. Principal of IGS, Ms Shauna Colnan, also enforces that we have a “big opportunity” to improve our output and relations with communities via sustainable practices. Meanwhile, Deputy Head of High School Mr Paul Galea enforces that “people [students] have a façade of being environmental but often they don’t contribute at a basic level,” citing external involvements in sustainability, such as the School Strike for Climate movement, as good ways to show support but not providing accountability for students.

Inquiry 3: Evaluate strategies to address waste at IGS

A cultural change is crucial to prioritising sustainability at IGS. Many people support this idea – one teacher in a school-wide survey commented that we foster a “culture that does not support a sustainable school,” and students who urge that “we just need to do something” (survey 2021). We can see that, while ongoing efforts have been made to reduce waste consumption at IGS, these have mostly been in the form of symbolic positions or ideologies. More drastic, implemented and practical approaches towards sustainability are necessary and encouraged by many ; the school’s sustainability is dependent on many, not simply cleaners or students.

From the survey, interviews, waste audit, media analysis, comparisons with other schools, and other research, many strategies have been developed. These have been sorted into four main categories:

ongoing strategies are strategies that provide regular education and actions to increase awareness of but decrease production of waste. They aim to change the culture of the school.

They build up to **system change**, a broad and difficult topic, spanning the course of many years. It would require broader support by teachers, executive staff, cleaners, and maintenance workers. **eg)** changing what IGS teaches in every grade to form a holistic sustainable education, regularly occurring events to reduce waste such as competitions.

individual events can work to enthuse students and staff about sustainability and waste management on a single day. **eg)** the IGS waste audit, halfcut, sustainability fair.

short-term changes work to create awareness for single days. **eg)** posters, videos.

Below is a table outlining potential strategies to address waste, their barriers, and information on how they would be carried out:

Name	Description	People	Category	Barriers	Time	Source

plastic reduction in canteen	Reduce plastic use in the canteen (eg. no more plastic bottles, students bring reusable lunch bags instead of plastic bags to fill with lunch orders) with a goal of reaching zero waste.	canteen staff, Patricia Anthony (canteen manager)	ongoing strategy	economic burden on canteen, student resistance, necessity for cultural change	2 years	survey
agriculture as a subject	Goal to introduce agriculture as a subject in IGS from early learning to high school.	executive staff, all teachers, maintenance staff, building owners (school-wide)	system change	cost of purchasing enough land, building owners, location	3 years+	survey
Increased transparency	Increase transparency around where waste goes, how waste is handled, and opinions around waste,	canteen staff, students, cleaners, maintenance staff	ongoing strategy	Reluctance of all parties to have an open communication, cost of cleaners' and teachers' time	continual	various – survey, waste audit, interviews

	through meetings between canteen staff, cleaners, staff and students. Increased communication					
composting	Introduce composting with bins around the school, education about composting, posters about how to compost	canteen, students, all staff	ongoing strategy	student resistance, necessity for cleaners to maintain compost bins, burden on external workers	6 months	various
Implementation of sustainable education in IGS programs	Consultation with all teachers and executive staff to create a program to educate students on sustainability in all subjects from early learning, in a holistic and	executive staff, all teachers, maintenance staff (school-wide)	system change	Student and staff resistance, necessity for all teachers to understand the program, communication	1 year to develop, then ongoing	various, survey

	<p>effective way.</p> <p>A staff training program would also be necessary in order to equip teachers with the skills and content to teach students.</p>					
return and earn	<p>Introduce return and earn bins for empty bottles. This would also require student and staff education about how to use them, funds, and cleaners being onboard.</p>	<p>executive staff, all teachers, maintenance staff (school-wide)</p>	<p>system change</p>	<p>Necessity for student involvement, poor communication, lack of sustainable education of staff</p>	<p>8 months – 1 year</p>	<p>survey</p>
awareness	<p>Increase student and staff awareness of waste management</p>	<p>all teachers, students, executive staff</p>	<p>ongoing strategy</p>	<p>Communication, education of staff BEFORE educating students</p>	<p>continual</p>	<p>various</p>

	through education programs for both students and teachers, regular events to acknowledge sustainability					
waste free wednesday	Have students (particularly in primary school) bring no waste in their lunches one day a week.	IGS parents and carers, canteen, primary students	ongoing strategy	necessity for ongoing communication with primary parents	continual (3 months to start)	Mr Fedele, survey
e-waste	Collect e-waste in bins around the school or on a specific day each term, and organise for collection by an external service.	Executive staff, Head of Sustainability, school board, students, media staff	ongoing strategy	cost of an external service, communication	continual	survey
online assessment notifications	Move all assessment notifications to online only (accessed	All teachers and department heads	ongoing strategy	Accountability for staff	2 months	sustainability club

	from canvas). Students can get a hard copy if requested.					
Soft plastics recycling	Place new bins around the school for soft plastics recycling. This would also require students to be aware of what counts as soft plastics, and transparency about where this waste goes. It may also require the hiring of an additional service to collect soft plastics.	Executive staff, Head of Sustainability	system change	Cost of external service	1 year to be school-wide	survey
better bin access	Universalise the bins around the schools and label them clearly –	executive staff, all teachers, maintenance staff, students,	system change	Cleaners' resistance or lack of understanding, misuse by students, cost,	6 months	various

	<p>ideally these bins would match the new ones in the library, which are colour-coded and labelled. Bins should be accessible in every classroom, use biodegradable bin liners, and have posters on them outlining which rubbish can be disposed of in each bin.</p>	<p>cleaners (school-wide)</p>		<p>distrust of the system</p>		
competitions	<p>Competitions between classes (mainly in primary school), with a reward for the class that consumes the least amount of waste.</p>	<p>Primary teachers and students</p>	<p>ongoing strategy</p>	<p>Requirement for extra work by primary teachers.</p>	<p>ongoing</p>	<p>various</p>

bin monitors	Student monitors standing near bins to instruct students on correct bin use and to hold students accountable. it would take place every lunch and recess, on both the primary and high school timetables.	All students, all teachers, cleaners, canteen staff, teachers on duty	system change	Necessity for student training to be monitors, lack of willing volunteers, timetable differences between primary and high school.	ongoing	Interview with patricia anthony
posters	Creating posters to encourage actions such as correct bin use, reducing litter, and to raise awareness. Most posters would be created by primary or early high	Students and primary staff	short term	Does not create a long term solution, unlikely to change minds or culture of the school	2 weeks	primary sustainability club

	school students.					
videos	Creating a video by primary sustainability club to show at school assembly. It contains messages of awareness and action about waste and general sustainability.	Primary sustainability club members, high school volunteers, Ms El	short term	Does not create a long term solution	4 weeks	primary sustainability club
halfcut	Encourage students around the school to shave, braid or dye half of their hair in support of halfcut, on a specific day.	All teachers, students, maintenance staff, executive staff	Individual event	Covid restrictions, organisation	2 months to organise	Sustainability club

Conclusion

Inquiry 1: Explore the nature of waste at IGS

The first inquiry explored the nature of waste at IGS – that is, how, when, where, and what types of waste is produced at the school; this inquiry provides the foundation for the project.

As predicted, waste at IGS is a significant issue, especially regarding food waste at recess and lunch times. The waste audit identified that the majority of waste, at 64.87%, is classified as miscellaneous, something not anticipated in the hypothesis. This is followed by food waste, at 36.48%, and paper, at 19%, amounting to 7.22 items of waste consumed daily per student. While some students do disregard the sustainable aims of the school, Figure 8 presented that 70.6% of students don't actually notice the changes made in attempt to increase the sustainability of the school, indicating a deeper cultural issue of negligence amongst students.

A major concern surrounding waste at IGS is how it is managed and whether or not current systems and efforts are effective. The 2020 survey conducted to decipher the community's perceptions of waste management revealed that many believe that "all the bins get emptied into the one bin regardless of the material" and report seeing "our recycled bins put into the same bag as the general waste".

Poor management of bins was expected in the hypothesis – bins "are not clearly labelled or allocated around the school". A key factor in waste management is accessibility – without this, we cannot properly address our sustainability.

Overall, the nature of waste at IGS has been described as "archaic" (High School student, 2021 survey), and student attitudes can limit the prospects of change. Despite this, with systemic changes to the school's culture, IGS *can* follow through on sustainability frameworks and implement accessible, environmentally friendly waste systems.

Inquiry 2: Explain the impacts of waste at IGS

The second inquiry explored the impacts of waste at IGS – that is, the social, economic and environmental consequences of IGS's waste. Essentially, this focuses on the results of the first inquiry.

As predicted, the environmental impacts of our waste included food waste, carbon footprints, contributions to climate change, and increased waste in landfill. Blocked storm water drains and soil contamination were not observed, so this report cannot make conclusions about these areas.

Following the hypothesis, the social impacts of IGS's waste were primarily associated with the culture developed within the school and the passing of blame to different parties. The impact of IGS's waste on the community, which was not commented on in the hypothesis, was mentioned by some interviewees, who stated that the aesthetics of built-up waste create a negative view of the school.

Misuse of budget, the main hypothesised economic impact, was not a concern amongst primary research respondents. Instead, the main criticism came from the canteen, whose criticisms revolve around the amount of their budget being spent on sustainable packaging. There are also concerns surrounding the overall cost (including purchasing, maintenance and implementation costs) of the addition of a comingled bin and the universalisation of the bins used in the Bibliotheque.

Inquiry 3: Evaluate strategies to address waste at IGS

The second inquiry evaluated potential strategies to address waste at IGS – that is, analyse plans on different scales that would aim to reduce or manage waste at the school. It provides tangible actions that can be taken to improve waste management systems.

As anticipated, many survey respondents supported reducing general waste (69%), increasing recycling (70.6%), and composting (69%). Most responses were focused on potential action that IGS and other school groups could undertake, rather than extending to governments and individual responsibilities. Many also agreed that the school's culture – particularly the attitudes of students – needs to change. These strategies can now be used to rectify waste management at IGS and foster a direct and positive approach to sustainable management.

Evaluation

The report provided a consideration of multiple perspectives on waste management, and incorporated interviews from teachers, students, maintenance workers, and executive staff. The main shortcoming of this primary sourcing came from the lack of perspectives of cleaners; while cleaners were contacted and asked to participate, most were concerned about potential implications of discussing sustainability, despite confirmations by the Head of Maintenance that this would not be an issue. The survey was successful in seeing mainly student and teacher perspectives, with 126 responses from 22 teachers, 4 support staff members, 7 parents, 90 high school students, and 1 NGO member working with the school. A wide sample size was a crucial aspect of this report's accurate reflection of the community's perspectives and values. Exchanges with the City of Sydney Council allowed for the inclusion of an external perspective in collecting research.

Ethical collection of data was respected in the assembling of this report in order to preserve the privacy of those involved. Prior to recording interviews, interviewees were made aware of the purpose of their responses and how they would be used, and consented to their interview being recorded. Interviewees have been quoted directly and named throughout the report as to not misinterpret their intentions. The survey contained a note reading "the information collected will be shared with the IGS community and used for student research assignments," to ensure transparency. While questions regarding gender and name were compulsory, this was simply for demographics – names of respondents were not used in the report but comments were quoted directly. It is also acknowledged that IGS stands on the unceded lands of the Gadigal people of the Eora Nation, where this SGP was researched and written. IGS pays respects to Elders past, present and emerging across Australia.

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APPENDIX

**SGP Part 5 -
Full Report**

**PRIMARY
RESEARCH**



Photos













Interviews

Answers – Recordings

Interviewee	Recording File
IGS Head of Facilities – Mr Pramod Mainali	 Interview Pramod.m4a
Head of IGS Canteen Ms Patricia Anthony	 Patty Interview.m4a
Deputy Head of High School Mr Paul Galea	 Galea interview.m4a
Principal of IGS Ms Shauna Colnan	Unfortunately, the audio file for this interview was unable to be downloaded. It is included in the canvas submission.
Head of Sustainability Mr Carmelo Fedele	 Fedele interview PART 1.m4a  Fedele interview PART 2.m4a  Fedele interview PART 3.m4a

Note: due to a lack of time, the interview with Head of Sustainability Mr Carmelo Fedele was done in three parts.

Answers – Interviewer Notes

Mr Pramod Mainali

Preliminary Questions

What is your name?

Pramod Mainali

What is your role in the school? (teacher, learning assistant, student, facilities staff, principal)

Facilities Manager

Restate Inquiry 1: Explore the nature of waste at IGS

Do you think that IGS is a sustainable school? Why/why not?

Yes, because we try to make the school sustainable in a different way – managing waste, thinking about energy, and making a safe environment.

How much waste do you think IGS produces in comparison to other institutions?

- I can't tell you, but in our school, we produce about 3000 kilolitres every day during the Term, and 500 to 1000 kilolitres every day during School Holidays.
- This includes all types of rubbish
- Once a week, we produce 45 kilolitres of comingled waste.

How much waste do you think IGS produces per student daily?

- Including teachers and division – 1500-1800 students
- About 2.5 kilos per person

What sorts of waste do we produce?

- 50% is thrown away food, 50% is a combination of plastic, paper and bottles

When do we produce the most waste?

- Recess and lunch – 80% of food waste
- After school – 20% of food waste
- Bins emptied after lunch and recess, the last clearing of bins is at 6pm where 20% of waste is found.

Where do we dispose of our waste?

- 11 000 litre bin, x 3 for landfill, x2 for paper

Why do we produce as much waste as we do?

- We run a school
- As a requirement, a student has to eat, if they don't eat something it's thrown out.
- Most of the paper waste is packing papers from deliveries

Who is responsible for this waste?

- School management
- Outsourcing – take to landfill
- Cleaners

Restate Inquiry 2: Explain the impacts of waste at IGS

How much of IGS's waste do you think is recyclable?

- If we manage it properly, 50% can be recycled – with proper management, including thinking from students and staff.

What are the impacts of IGS on the sustainability of the wider community?

- Less waste means less carbon footprint, means we save our environment.
 - o Makes the school cleaner.

- o reduces smell
- o reduces work
- o reduces necessity for cleaners
- More waste = more cleaners
- Includes staff, management, cleaners

Do you think that IGS's waste has a large environmental impact? Why?

I don't think so, we really manage the students and staff. Students are really aware of waste, but we can manage it more. Compared to other public schools, we have a good system of Waste Management.

Do you think that our waste has any economic impacts? If yes, what are they?

We can start to save money in terms of picking up waste from exterior people (when waste is managed), from a school management point of view it is better to manage waste.

Do you think that our waste has any social impacts? If yes, what are they?

I don't think so, because we're not producing really hazardous waste. We control the waste – when there are issues, we pick them up. Managing it properly costs money.

Restate Inquiry 3: Evaluate strategies to address waste at IGS

What actions are you aware of within the school aiming to improve sustainability?

- Paper is being recycled
- Waste Audit (2020)
- Not many more strategies have been implemented, but we can "go for it".

What waste-reduction strategies do you think would be beneficial to implement in IGS?

- If we can train students and staff to manage waste from the first point, it will really help us to minimize cost and resources.
- Ozonic water can be used as disinfectant and can be consumed. It's a nano technology, means we save money and the environment.
- Has been working in the US, UK, Singapore. It can also be used as sanitizer for COVID-safe protocols.

What, if any, are the barriers to implementing these strategies?

Students reluctance – don't toss the proper waste in the proper bin. We need more student training – to every year group. When students put bottles in a bottle bin, we can effectively manage costs and environment.

Could be a cost barrier, it is all about how we interact with the waste.

- \$30 - \$35 per day could be saved through bottle recycling
 - o Earns around \$50 daily
- Implement this by buying bins
- We need help from students and staff.
- Not keen to put bins in classrooms
 - o Smells and environmental safety becomes an issue
- Big bins work best but require student training.
- It's all about how we develop habits in our students

How do you think these barriers could be overcome?

- Through student training, once a term
- Set an example area and we can renew training
- Even with staff and teachers
- Hand out flyers to parents and students

Do you have any other general comments about waste at IGS?

- Now, we manage the waste the proper way

- If students and staff work really well, we can improve generating money and managing waste.
- We used to have vending machine for bottles

Do you think we could have composting?

- We have to think about it
- The gardener is excited to use compost
- This would save us 10 thousand dollars.
- We have to consider the smell
 - Impacts on the school environment
- We have to manage it first.

Mr Paul Galea

Preliminary Questions

What is your name?

Paul Galea

What is your role in the school? (teacher, learning assistant, student, facilities staff, principal)

Deputy of High School

(if a student) What is your age and year group?

Restate Inquiry 1: Explore the nature of waste at IGS

Do you think that IGS is a sustainable school? Why/why not?

- No
- We could be doing a lot more in terms of recycling, students making recycling easier
- Many students want to talk about environmentalism and don't follow through

How much waste do you think IGS produces in comparison to other institutions?

- No more or no less
- I know that we can manage our waste better

How much waste do you think IGS produces per student daily?

- Maybe 400-500 grams

What sorts of waste do we produce?

- A lot of paper
- A looooot of paper
- Food scraps, from lunches and uneaten food
- Less bottles and cans
- Paper is huge

When do we produce the most waste?

- Paper = all day
- Food scraps are after recess and lunch
- Recess and lunch

Where do we dispose of our waste?

- Side passage

Why do we produce as much waste as we do?

- We live in a very affluent school
- A lot of food given to students is not eaten or only partially eaten

- Paper is a function of being a school
- People like working with paper

Who is responsible for this waste?

- Teachers produce a large percentage of paper waste
- Students produce a big part of it
- Food scraps are predominantly students

Restate Inquiry 2: Explain the impacts of waste at IGS

How much of IGS's waste do you think is recyclable?

- A lot
- 60-70% if not more

What are the impacts of IGS on the sustainability of the wider community?

- In terms of our community here, we don't impact much
- Mostly internalized
- In terms of the world community, producing more landfill than we need to is an issue
- We can't influence what others do, just what we do

Do you think that IGS's waste has a large environmental impact? Why?

Not a huge impact, but if we can reduce it that will only help

Do you think that our waste has any economic impacts? If yes, what are they?

- I'm not sure what the cost of removing the waste, but I'm assuming it's quite expensive
- Bottle recycling can earn us money
- Composting will help the financial cost

Do you think that our waste has any social impacts? If yes, what are they?

- In the world, there's talkers and there's do-ers.
- People have a façade of being environmental but often they don't contribute at a basic level
- It would be a great thing if people took responsibility
- It's easy to go on a march, it's not so easy to not pick up rubbish and contribute
- We should raise people's awareness to lead to actions

Restate Inquiry 3: Evaluate strategies to address waste at IGS

What actions are you aware of within the school aiming to improve sustainability?

- Year 6 group (cleanup crew)
- Mr Fedele – Head of Sustainability
 - Sends a good message
 - Good outcomes
- Again, there has to be more than a head of sustainability
- Give support to make things happen

What waste-reduction strategies do you think would be beneficial to implement in IGS?

- Proper recycling
 - Needs to BE recycled
- Composting
- Solar heating, energy
- Biggest thing is making people actually 'fair dinkum' about their environment here
- Actively engaging in behaviors that make our community more sustainable

What, if any, are the barriers to implementing these strategies?

- It's very easy to tick boxes and say you're doing things
- A lot harder to make real change

- Requires a lot of long-term effort

How do you think these barriers could be overcome?

- There has to be a will from the top of the school, which I think there is
- I think when strategies are put in place, the school needs to support them and try to make them work
- It requires a lot of willpower and effort
- It is a long term thing

Do you think we could have composting?

- We had composting, but there was an issue with the smell in the air conditioning
- We could have it again

Do you have any other general comments about waste at IGS?

N/A

Ms Patricia Anthony

Preliminary Questions

What is your name?

Patricia Anthony

What is your role in the school? (teacher, learning assistant, student, facilities staff, principal)

Manager of the canteen

(if a student) What is your age and year group?

Restate Inquiry 1: Explore the nature of waste at IGS

Do you think that IGS is a sustainable school? Why/why not?

- Yes
- It tries very hard to be, it's just difficult for the kids to follow through
- Initiatives are put in place, but the kids kept putting regular rubbish in it

How much waste do you think IGS produces in comparison to other institutions?

- A lot less
- We are more aware and in-tune with waste and recycling

How much waste do you think IGS produces per student daily?

- A fair bit
- The waste audit – I was very surprised

What sorts of waste do we produce?

- A lot of plastics
- Lot of recyclables
- Packaging – pre-packaged foods
 - Yogurt, plastic cheese and crackers packets

When do we produce the most waste?

lunchtime

Where do we dispose of our waste?

- General bin
- Council bins around the school
- Overflowing at the end of lunch

Why do we produce as much waste as we do?

- It looks like a lot because of the area of the school
- In comparison, it is not a lot
- Happens to be centered at the canteen

Who is responsible for this waste?

- Cleaners
- Students produce it
- A lot of waste in furniture and things not being reused

Restate Inquiry 2: Explain the impacts of waste at IGS

How much of IGS's waste do you think is recyclable?

About 30%

What are the impacts of IGS on the sustainability of the wider community?

- A knock-on effect
- If we don't educate when the kids are young, they won't follow through in the next phase of life

Do you think that IGS's waste has a large environmental impact? Why?

- No more than any other school
- It looks like a lot

Do you think that our waste has any economic impacts? If yes, what are they?

- The more sustainable the packaging, the more it costs for us
- Using sugarcane items in the canteen costs money, paper straws
- Sustainable products cost a lot more
- It's hard to maintain when everything still goes to landfill

How do we deal with that?

- Initially, there should be recycling bins
 - Should be manned and monitored
 - People standing at bins
- Educating students

Do you think that our waste has any social impacts? If yes, what are they?

- The perception of IGS is a positive one
- Compared to other schools, I think it would have a more positive reputation

Restate Inquiry 3: Evaluate strategies to address waste at IGS

What actions are you aware of within the school aiming to improve sustainability?

- Our packaging is sustainable
- Only plastics that need to be warmed have been kept
- Our packaging is bio-pac
- We tried to do no plastic bottles but there was a demand for them
- Compost bin around the corner
- Bottle cap bin

What waste-reduction strategies do you think would be beneficial to implement in IGS?

- Proper bins for the right packaging
- Bio-pac needs to be disposed of in a special bin
 - Actions before it goes into the actual bin

What, if any, are the barriers to implementing these strategies?

The kids need to co-operate

How do you think these barriers could be overcome?

- Initially, a rewards system would work
- Constant re-enforcement

Do you have any other general comments about waste at IGS?

- Overall, compared to other schools IGS does very well
- Most students are very conscious of it
- Doing well, more to be done

Ms Shauna Colnan

Preliminary Questions

What is your name?

Shauna Colnan

What is your role in the school? (teacher, learning assistant, student, facilities staff, principal)

Principal

(if a student) What is your age and year group?

Restate Inquiry 1: Explore the nature of waste at IGS

Do you think that IGS is a sustainable school? Why/why not?

- In some ways yes, some ways no
- Part of sustainable thinking is being aware that you have a long way to go

How much waste do you think IGS produces in comparison to other institutions?

- Compared to other schools I've worked in, IGS is in many ways a much leaner school
 - Footprint is smaller
 - Becoming more aware
- Use less paper than schools that I'm familiar with

How much waste do you think IGS produces per student daily?

- Go Wild group
- They think that waste consumption is improving
- Not too much produced by lunch boxes – families are aware of sustainability
- Canteen still uses some single-use plastics
- Some students produce little

What sorts of waste do we produce?

- Food waste (in bathrooms etc)
- Paper

- Plastic packaging

When do we produce the most waste?

Break times

Where do we dispose of our waste?

- Bins in every classroom and office
- Project around bins
 - Group of students looking into what bins we have, where they are
 - How we can improve the separating
 - Run by Mr Fedele

Why do we produce as much waste as we do?

- It is about this journey that everyone is on about thinking sustainability
- Good to think about a student/teacher individually
- Produce waste without thinking, when you begin to think about it waste is produced less
- It's a way of thinking
- Has to be leadership
- Sustainability framework
- About awareness

Who is responsible for this waste?

- We all are
- With sustainability, everyone is responsible
- We make the best progress when everyone understands

Restate Inquiry 2: Explain the impacts of waste at IGS

How much of IGS's waste do you think is recyclable?

- A lot of it, if we understand the state of it

What are the impacts of IGS on the sustainability of the wider community?

- If we can become a lighthouse school, and a community that is leading the way, it will flow out
- We've got thousands of people, who, if they're invested, it will flow back out

Do you think that IGS's waste has a large environmental impact? Why?

Yes, until we can do better with our waste

Do you think that our waste has any economic impacts? If yes, what are they?

- With things like our use of paper, we are using a lot more than we should be
- We are working very hard to operate the school as sustainably as we can
- We want all aspects of the school to be maintained financially very well

Do you think that our waste has any social impacts? If yes, what are they?

- If you look at the school's values, they can all have a sustainable lens
- We have a big opportunity

Restate Inquiry 3: Evaluate strategies to address waste at IGS

What actions are you aware of within the school aiming to improve sustainability?

- Our strategic plan
 - Three aspects – one is “a sustainable school”
 - Aims have been worked out - one is “a strong and sustainable school”
 - Focus group will meet next week
- Audit on solar panels
- Group of Year 12 students a few years ago
- A lot comes from the students – grassroots things

- It has to come from all of us
 - o Parent body that it committed
 - o Students
 - o Staff
- Rue Kelly (second-hand sale), lost property
 - o Driven by parents

What waste-reduction strategies do you think would be beneficial to implement in IGS?

- Solar panels
- Making sure that all of our lights are LED and better, more sustainable
- A “really good look at” air conditioning
 - o Do we need it in every room?
- Using spaces as effectively as possible
- Use the roof more effectively than we are
- Support the canteen
- More greenery

What, if any, are the barriers to implementing these strategies?

- One of the biggest barriers to these types of things is the business of the school day
- Our main focus is delivering the curriculum
- Finite resources – use as effectively as we can
- It’s about developing that shared understanding around everyone
- All of these can be done

How do you think these barriers could be overcome?

- Creating the role of the Head of Sustainability
- Co-ordinate what was going on
- Professional Development through the UN
- As educated as possible, share that knowledge
- To communicate that it’s everyone’s responsibility

Do you have any other general comments about waste at IGS?

- Grassroots research, work of students is incredibly powerful
- Climate Strikes
 - o Need to work on sustainability within the school
 - o Supported students to go

Mr Carmelo Fedele

Preliminary Questions

What is your name?

Carmelo Fedele

What is your role in the school? (teacher, learning assistant, student, facilities staff, principal)

Head of Sustainability and Geography teacher

(if a student) What is your age and year group?

Restate Inquiry 1: Explore the nature of waste at IGS

Do you think that IGS is a sustainable school? Why/why not?

- What sustainability is

- o Contested idea
 - o Perceived in different ways
 - o Starting point is the way we learn about it in Geography
- Our intentions are good
- We want to be doing the right thing, managing our resources – waste, energy, green spaces – better
 - o Caught up in the day-to-day – we need to run a school
 - o Sustainability is seen as peripheral
- What we mean by school
 - o People who make up a school
 - o Students, teachers, support staff
 - o Often, sustainability falls to people managing facilities – cleaners, canteen
- I think our intentions are good, on the right track

How much waste do you think IGS produces in comparison to other institutions?

- Never been this close to the issue
- Very dense and vertical
- The waste we produce is fairly similar to other schools
 - o Key difference is that a significant portion of our students go off campus for lunch
 - o Largest portion is from recess and lunch packaging
 - o Outsourcing waste management
- Taking this into account, less than average
- School is physically smaller but a bigger footprint.

How much waste do you think IGS produces per student daily?

- Best estimate is based on the data we have from the waste audit
- 200 kg

What sorts of waste do we produce?

- Plastics – some recyclable, some not
- Paper – various forms – cardboard, paper board, printer paper
- Glass and aluminum
- Food waste
- E-waste

When do we produce the most waste?

Most will be produced at recess and lunch

Where do we dispose of our waste?

- Currently, we have a fairly inconsistent system across the school
 - o Huge variety of different types of bins
 - o Method bins near the Biblioteque – recycling, paper, landfill
- The cleaners, at the moment, go to all of those bins and put them all into big plastic bags
- 3 x red landfill, 2x blue paper
 - o Paper = most cardboard packaging
 - o Most
- Yellow co-mingled service is better
 - o Take out one landfill, add a recycling bin
- A lot of our waste is food waste
 - o Can be composted
 - o In early learning they are thinking of having a worm farm
 - o Started a compost bin HSIE staffroom
 - o Primary sustainability club have just installed a small compost bin

- Who is it for?
- o To properly compost across the school, we would need a better solution than isolated composting – need to have commercial composting system
- o We need someone to manage it

Why do we produce as much waste as we do?

- Symptom of modern society – throwaway culture
 - o Accelerated by the pandemic
 - o Need to package things to keep them sanitary
- Trying to be very conscious
- Solution = be like Fedele
- Inherited a consumer culture with a huge waste byproduct
- Until we assess and change our behaviour, it doesn't change

Who is responsible for this waste?

- All of us in the IGS community
- Students, teachers, parents
 - o Parents pack lunches for primary students – make a choice
- Leadership
- Facilities team
 - o Make decisions
- Cleaners
 - o Two cleaning companies
 - o Pickworth, Alan and Emy

Restate Inquiry 2: Explain the impacts of waste at IGS

How much of IGS's waste do you think is recyclable?

- At the moment, we recycle about 19% of all of our waste
- There is a percentage of things that we can't recycle – plastics etc
- Probably could recycle 80% of our waste currently
- No yellow comingled service
- Don't recycle aluminum and glass
- Food waste makes up a significant proportion

What are the impacts of IGS on the sustainability of the wider community?

- If we just think locally, we produce a lot of waste – some is disposed responsibly, some isn't
- Has an impact on the aesthetics of our local community
 - o Big items are dumped
- Environmental impacts
 - o Rubbish goes into waterways
 - o Rubbish that sits around
- Odor/smell
- Psychological and wellbeing aspects
 - o There are a lot of people who feel uncomfortable with the impacts they are having
 - o We don't like thinking that we can and should do better
 - o Sentiment is shared by a lot of people in our community
- More impacts if we widen the idea of community
 - o Carbon emissions
 - o By not managing our waste, we are contributing to climate change

Do you think that IGS's waste has a large environmental impact? Why?

- Relative term – in short, yes
- When we look at IGS in the context of Australia, we seem small
 - When we look at climate change as a global issue, we need to take individual responsibility

Do you think that our waste has any economic impacts? If yes, what are they?

- Costs us money to process our waste
 - \$30-\$40 per bin per collection
 - Red bins are collected every day
- Reduction = financial benefit

Do you think that our waste has any social impacts? If yes, what are they?

- For the people who care about this issue, there is an impact
- Odor, aesthetics, all issues
- People thinking they are part of the solution

Restate Inquiry 3: Evaluate strategies to address waste at IGS

What actions are you aware of within the school aiming to improve sustainability?

- Waste audit was one of the biggest ones
 - Needed to start by measuring the problem
- This SGP will help to see relationships etc
- After the waste audit, spoke to Sydney Waste – who collect our bins
 - Max Pash – MRA Consulting – looked at our current waste program
 - Wrote a report with suggestions – including yellow comingled service
 - More consistent bin system – standardize
 - Way of changing the school culture
 - All goes to landfill
 - 50% of funds to buy bins provided
 - Other suggestions –
 - Return and earn
 - Composting
 - Need to do another waste audit after the implementation of strategies

What waste-reduction strategies do you think would be beneficial to implement in IGS?

- Goal = reduce the waste to landfill
 - Increase recycling
 - Increase composting
 - Reduce waste brought to school
- Recycling
 - Bin system
 - Clear, consistent
 - Confident that the system is working
 - Currently, lots of people who mistrust the system
 - Cycle
 - Rethink of our approach
 - Purchase more bins

- Colour coded
 - Clearly labelled
 - Consistent
 - Maybe no bins in classrooms – instead in strategically placed locations
- o Recycling service
 - Get a yellow co-mingled service
 - Elements of a confident system
 - Communicate
 - Video – primary sustainability club
 - Instill confidence
- Composting
 - o Begin on a small scale
 - HSIE department, outside hall
 - o Universal solution
 - o Additional bin (eventually) – emptied into a composting service
 - Fed. Gov. plan across local councils - 2030
- Waste brought to school
 - o “Waste-Free Wednesday”
 - Bring to school recess and lunch without single use plastics
 - Explanation of why

What, if any, are the barriers to implementing these strategies?

- Recycling
 - o Staff who are supportive – but it takes effort
 - o Some people find the extra effort challenging
 - o Concerns about contractual agreements
 - o Introduction of co-mingled service is necessary
- Composting
 - o Financial restrictions
 - o Pre-existing systems (canteen)
 - Need to make systems in consultation with stakeholders
 - Three-pronged approach to sustainability
 - Figure out solutions school-wide
- Cultural change
 - o Universal communication necessary
 - o Why it is important?
 - o What can we do about it?

How do you think these barriers could be overcome?

- Cultural change
 - o Communication
 - o Education
- Inertia
- Resistance to change
 - o Collaboration and consultation (school-wide)
- Persistence
 - o Important to creating change

Do you have any other general comments about waste at IGS?

Questionnaire

A questionnaire was sent out to all IGS students and staff about Waste Management at the school. Consultation with the people that these issues are directly affecting is crucial in understanding the nature, impacts and solutions to the issue of waste.

The link to the survey questions and answers can be found here:

<https://forms.gle/ew2vsZGekbdUk2Wo7>

Waste Audit

In 2020, I, along with at least 30 IGS students ranging from year 5 to year 12, carried out a school-wide waste audit in order to calculate and analyse the waste consumption of our school. While we were not able to look at the waste in every campus of IGS, we used the data collected from Kelly St, where the waste audit took place, as a basis from which to calculate our average waste use. This data was then used to determine our impacts on the wider community and our carbon footprint; we also brainstormed and presented strategies to address waste at IGS.

This is a proposal, outlining the intentions and goals of the waste audit. It shows the outline and curriculum links of the Waste Audit.

https://docs.google.com/document/d/1f7THd7xFO7CbFKU_stT8f02y1IUeCDcbogHd7Hhdv8w/edit

The following presentation was created by me, Sustainable Futures member and current Year 11 student Nate Turner, and Head of Sustainability Mr Fedele. It was presented to students involved in Sustainable Futures in both primary and high school prior to the waste audit, laying out the process by which we would sort waste and collect data.

<https://docs.google.com/presentation/d/1fNhFWY0IFkhkdDE7HklCxnUxDZp4VgPY-TZoj0xMjFw/edit?usp=sharing>

The following spreadsheet was created shortly after the briefing presentation in the high school meeting. While it only shows a few high school students who participated, I would also like to acknowledge the primary school students who volunteered during their recess and lunch times, and others who decided to help on the day.

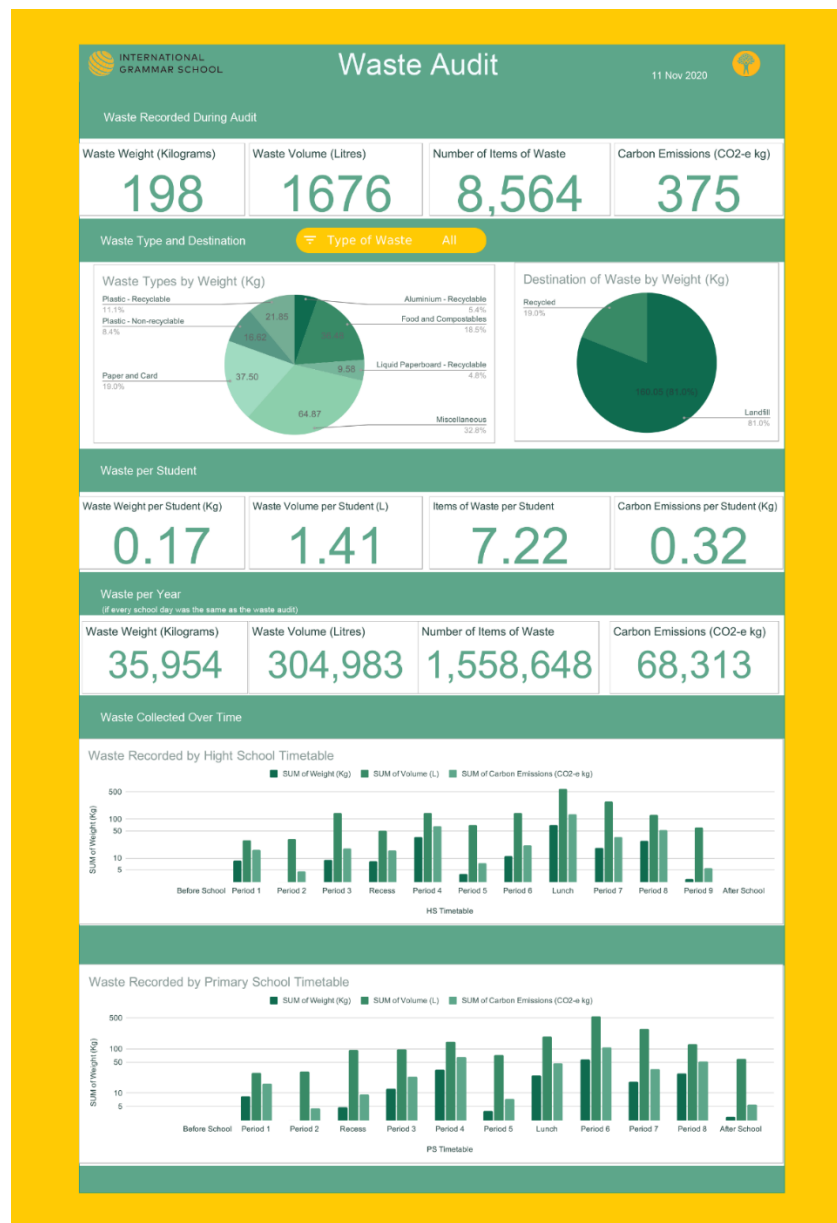
Waste Audit Roster											
Wednesday, November 11, Week 5, Term 4											
Timeframe				Roles							
Start	Finish	HS	PS	Carriers	Sorters	Weighters	Recorders	Fedele (All day)			
8:00 AM	8:35 AM	Before School	Before School	Alexander Johnson (Y9), Joseph Manning (Y12)	Hugh Gibbons (Y7), Lili Digweed (Y12), Alia Babcock (Y12)	Hugo Johnson (Y10)	Nate Turner (Y10), Harriet Ryder (Y10)				
8:35 AM	9:25 AM	Period 1	Period 2	Alexander Johnson (Y9)	Hugh Gibbons (Y7), Lili Digweed (Y12), Alia Babcock (Y12)	Hugo Johnson (Y10)	Nate Turner (Y10)				
9:25 AM	10:00 AM	Period 2	Period 3	Alexander Johnson (Y9)	Hugh Gibbons (Y7), Lili Digweed (Y12), Alia Babcock (Y12)	Hugo Johnson (Y10)	Nate Turner (Y10)				
10:00 AM	10:20 AM	Period 3	Recess	Alexander Johnson (Y9)	Hugh Gibbons (Y7), Lili Digweed (Y12), Alia Babcock (Y12)	Hugo Johnson (Y10)	Nate Turner (Y10)				
10:20 AM	10:40 AM	Period 3	Period 3	Alexander Johnson (Y9)	Hugh Gibbons (Y7), Lili Digweed (Y12), Alia Babcock (Y12)	Hugo Johnson (Y10)	Nate Turner (Y10)				
10:40 AM	11:00 AM	Recess	Period 3	Joseph Manning (Y12)	Louis Williamson (Y12), Hugo Grist (Y10), Maddy Hayden (Y8)	Evan Thomas (Y12), Dan O'Shea (Y12)	Nate Turner (Y10)				
11:00 AM	11:40 AM	Period 4	Period 4	Alexander Johnson (Y9)	Louis Williamson (Y12), Hugo Grist (Y10), Maddy Hayden (Y8)	Evan Thomas (Y12), Dan O'Shea (Y12)	Nate Turner (Y10)				
11:40 AM	12:20 PM	Period 5	Period 5	Alexander Johnson (Y9)	Louis Williamson (Y12), Hugo Grist (Y10), Maddy Hayden (Y8)	Evan Thomas (Y12), Dan O'Shea (Y12)	Nate Turner (Y10)				Jaemin Fyfe - 1 Blue
12:20 PM	1:00 PM	Period 6	Lunch 1	Alexander Johnson (Y9)	Louis Williamson (Y12), Hugo Grist (Y10), Maddy Hayden (Y8)	Evan Thomas (Y12), Dan O'Shea (Y12)	Nate Turner (Y10)				
1:00 PM	1:15 PM	Lunch 1	Lunch 2	Tili Merten (Y12), Joseph Manning (Y12)	Hugo Grist (Y12), Alia Babcock (Y12), Angie Hayward (Y12)	Grace Truman (Y12)	Harriet Ryder (Y10)				
1:15 PM	1:30 PM	Lunch 2	Period 6	Tili Merten (Y12), Joseph Manning (Y12)	Hugo Grist (Y12), Alia Babcock (Y12), Angie Hayward (Y12)	Grace Truman (Y12)	Nate Turner (Y10)				
1:30 PM	1:55 PM	Lunch 3	Period 6	Tili Merten (Y12), Joseph Manning (Y12)	Hugo Grist (Y12), Alia Babcock (Y12), Angie Hayward (Y12)	Grace Truman (Y12)	Harriet Ryder (Y10)				
1:55 PM	2:35 PM	Period 7	Period 7		Jack Shooter (Y12)	Evan Thomas (Y12)	Maddy Hayden (Y8)				Danielle Okane - K Red
2:35 PM	3:15 PM	Period 8	Period 8		Jack Shooter (Y12)	Evan Thomas (Y12)	Nate Turner (Y10), Harriet Ryder (Y10)				
3:15 PM	3:55 PM	Period 9	After School 1		Jack Shooter (Y12)	Evan Thomas (Y12)	Nate Turner (Y10), Harriet Ryder (Y10)				
3:55 PM	4:30 PM	After School 1	After School 2	Joseph Manning (Y12)	Louis Williamson (Y12)	Evan Thomas (Y12)	Nate Turner (Y10), Harriet Ryder (Y10)				
4:30 PM		After School 1	After School 3	Joseph Manning (Y12)	Louis Williamson (Y12)	Evan Thomas (Y12)	Nate Turner (Y10), Harriet Ryder (Y10)				

<https://docs.google.com/spreadsheets/d/12zufK2oXd6G2HPfwxqggOU2z0kSKvTUIzNvhDT8IQOk/edit?usp=sharing>

This is the debrief presented to students by me and current Year 11 student Nate Turner after a discussion with some high school students after the waste audit. It presents the results of the waste audit, the impacts of IGS's waste, and possible strategies that could address this waste – this covers all three inquiry questions of my SGP.

https://docs.google.com/presentation/d/1fLHUT6NsTOyTlavldf3EvUOoEVJ_gJa5vdlhzCB2Yfl/edit?usp=sharing

The final results of the IGS Waste Audit can be seen below:



APPENDIX

**SGP Part 5 -
Full Report**

**SECONDARY
RESEARCH**



Websites

Sustainable Schools

Sustainable Schools gives us an insight into how waste management strategies can be implemented, not only outside of the curriculum but within the syllabus from preschool to Year 12.

Link to the Sustainable Schools waste-specific website can be found below:

<https://www.sustainableschoolsnsw.org.au/teach/waste>

State-wide Impacts of Waste Website

This website outlines the nature of waste on a NSW scale. After doing a waste audit, the data collated can be used to determine IGS's impacts on the waste on a state-wide scale, and how this can be improved.

Link to this website can be found below:

<https://climatechange.environment.nsw.gov.au/About-climate-change-in-NSW/NSW-emissions>

Analysis of Australia's "Waste Wise Schools" Program

Here we can see how programs, such as the Waste Wise Schools program, impacts schools' sustainability. This can be used to see which strategies should be implemented within IGS, and how school culture impacts success of such programs.

Link to this analysis can be found below:

<https://www.tandfonline.com/doi/abs/10.1080/00958960903347471>

Government Documents

City of Sydney Council “Green Reports”

This source contains official documents by the City of Sydney Council, the council local to IGS. The most recent document here contains information about the amount, recyclability, and nature of waste production in the City of Sydney, under the heading of ‘Zero Waste City,’ one of the aims. This gives a baseline for discovering the nature of waste at IGS and how it compares to other institutions.

Link to this document can be found below:

<https://www.cityofsydney.nsw.gov.au/surveys-case-studies-reports/green-reports>

NSW Government Waste Education

This NSW Government article allows for a full, school-wide implementation of syllabus-relevant sustainable education. It also outlines how a waste audit can be carried out - this is extremely relevant to this first inquiry.

Link to this site can be found below:

<https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/teaching-and-learning/waste>

Waste Improvement Strategies

This document allows us to see the spatial and cultural influences on waste production. It shows the impacts of IGS’s waste in comparison to other schools.

Link to this document can be found below:

<https://www.mdpi.com/2071-1050/8/9/840>

Videos and Documentaries

“War on Waste” Documentary

The ‘War on Waste’ documentary specifically looks at the impacts that young people and schools can have on sustainability. This allows us to see which programs and initiatives other schools have implemented, and the success of them, allowing IGS to analyse which strategies would work best at our school.

Link to this documentary can be found below:

<https://iview.abc.net.au/show/war-on-waste>

IGS News Articles

“Oodles of Food Hits the Bins” – Waste Audit 2020

Written in 2020, shortly after the IGS Waste Audit, this article outlines student and staff efforts to improve sustainability. The article delves into student and staff volunteers’ opinions on the school’s sustainability, and the observations of those involved. We can then use the following information to analyse the nature and possible solutions to waste management issues at IGS:

- “A significant proportion of the food waste were items that had not been finished or even touched. For example whole sandwiches, tubs of yoghurt and whole fruit.
- Much of the waste that was going to landfill can be recycled or composted. Even paper and cardboard that we currently recycle may end up going to landfill if it ends up mixed with general waste.
- Many students were genuinely shocked to see what ends up in our waste and wanted to do better.”

From this, we can see that IGS students were “shocked and flabbergasted” (Nate Turner, Year 10 2020) in seeing the “visual representation of what is thrown out” (Euan Thomas, Year 11 2020, Sustainable Portfolio Leader), and were eager for the waste at IGS to be improved. While it was a “really important day” (Maddy Hayen, Year 8 2020), we now need to use the information that the audit provided as a way to build on our sustainable waste management.

<https://www.igssyd.nsw.edu.au/blog/waste-audit/>

Further articles can be found here:

<https://www.igssyd.nsw.edu.au/search/waste/>