



Waste Strategy 2021-2040

Prepared for Georges River Council

8 February 2021



Mike Ritchie & Associates Pty Ltd trading as MRA Consulting Group (MRA)
ABN 13 143 273 812

Suite 408 Henry Lawson Building
19 Roseby Street, Drummoyne NSW 2047
AUSTRALIA

P +61 2 8541 6169

E info@mraconsulting.com.au

mraconsulting.com.au

Document

Author	Matt Hyatt, Jess Braun
Checker	Ron Wainberg, Mike Ritchie
Approver	Victoria Bond, Katherine Dodd

Document history

Title	Version no.	Status	Date
Georges River Waste Management Strategy	1	Working Draft	10/6/2020
Georges River Waste Management Strategy	2	Draft	15/06/2020
Georges River Waste Management Strategy	3	Draft	18/06/2020
Georges River Waste Management Strategy	4	Final	08/02/2021

Disclaimer

This report has been prepared by Mike Ritchie and Associates Pty Ltd (trading as MRA Consulting Group (MRA)) for Georges River Council. MRA (ABN 13 143 273 812) cannot accept any responsibility for any use of or reliance on the contents of this document by any third party.

This strategy was prepared by MRA for Georges River Council. This strategy is subject to copyright and contains confidential information. Therefore, any unauthorised use or distribution is prohibited, and all rights are reserved.

Strategy at a glance

Where are we today?

The “Where are we today?” section of the Waste Strategy provides an overview of Georges River Council’s current waste management practices including a review of the current legislation, policy, waste generation, waste composition, waste management contracts, waste management infrastructure and Council’s waste management programs including waste minimisation initiatives and education. It is intended to provide a “snapshot” of the state of waste management within the Local Government Area (LGA) today.

- Georges River Council is a LGA in Sydney, New South Wales (NSW). It is home to an estimated population of just over 156,000 people, residing in approximately 54,000 households. The population is projected to grow to over 188,000 people by 2040.
- Current waste services include residential kerbside collection of general waste, comingled recycling, garden organics and household clean-up materials. Georges River Council also provides kerbside collection of general waste and comingled recycling for businesses in the LGA, on an opt-in basis.
- Georges River Council delivers four Chemical CleanOut events held over six days each year for the disposal of hazardous chemical wastes and has established a drop-off service for tech waste at the Mortdale Council depot every Saturday.
- Total waste and recycling generation for Georges River Council residents is projected to grow from 57,900 tonnes per annum in financial year (FY) 19 to 86,836 tonnes per annum by FY40, based on household growth for the Georges River Council LGA and waste generation growth (kg per household per week) for Georges River Council from FY08 to FY18.
- Total waste and recycling generation for Georges River Council businesses that have opted in for Council’s waste services is projected to grow from 2,132 tonnes per annum in FY19 to 3,130 tonnes per annum by FY40, based on waste generation growth observed for Georges River Council commercial waste collected from FY15 to FY19.
- Of the 57,900 tonnes of waste generated by Georges River Council residents in FY19, approximately 24,000 tonnes were recycled through comingled recycling and garden organics services. This is a recycling rate of 41%, same as 41% average recycling rate for the NSW Metropolitan Levy Area in FY17 and above the Southern Sydney Regional Organisation of Councils (SSROC) average of 40% (latest available data).
- Total waste and recycling generation per capita for Georges River Council residents was 0.38 tonnes in FY19. This is less than the average generation of 0.51 tonnes per capita in FY17 for the NSW Metropolitan Levy Area. This suggests Georges River Council residents are consuming less per person than their peers in similar regions of NSW, or residents are disposing of waste through means other than Council’s kerbside collections and household clean-up collections.
- Georges River Council administers a number of contracts for waste collection and processing services. The contract for collection and processing of all waste streams (including public place litter bins) is due to expire in 2023, except the contract for processing general waste (from former Kogarah only) which expires in 2027.

Where do we want to go to?

The vision for the 19-year period (2021 to 2040) considered under this strategy is:

To continually improve on a reliable environmentally and economically sustainable waste management system for Georges River Council residents.

Specially, three themes are envisioned:

1. Improve amenity and environmental management

- To improve the community's experience of Council's waste services and foster pride in the local community through increased resource recovery rates and reduced occurrences of illegal dumping and littering.

2. Optimise waste management costs and foster adaptive waste management contracts

- To provide waste management services to the residents of Georges River Council at the lowest possible cost which is consistent with the reliability and environmental sustainability of those services.
- Develop contracts for waste management services which will allow Georges River Council to adapt to any changes in waste management technology and regulations.

3. Support and implement innovative waste management initiatives

- To deliver significant waste management outcomes through joint procurement of vital waste infrastructure and engagement in research projects in partnership with stakeholders such as SSROC and the waste management industry.

Strategic objectives were developed to translate the vision and themes into measurable goals.

How do we get there?

Thirty six (36) potential options were identified to address the strategic objectives over the next four years (2021 to 2025). These options were then assessed to select the key actions for the action plan.

The final list of sixteen (16) actions selected to address the strategic objectives of the waste strategy for commencement over the next four years are:

1. Trial and if successful then implement food organics and garden organics (FOGO) collections for all single unit dwellings (SUDs) and opt in service for multi-unit dwellings (MUDs) and businesses;
2. Develop and implement an education campaign to move recyclables from the general waste bin into the recycling bin and reduce contamination in the recycling bin;
3. Conduct competitive tender processes (potentially through joint procurement) for upcoming collection and processing contracts;
4. Draft flexible contracts for future general waste and recycling bins for processing/disposal to allow Council to transition alternate processing/disposal options such as Energy from Waste (EfW);
5. Finalise and publish the waste management conditions in the Georges River Council Development Control Plan;
6. Develop a new database to compile all relevant waste management contract information in one place and require all new waste management contracts to have specific reporting requirements to ensure the Waste Service Provider captures the necessary data and it is clearly presented;
7. Continue to monitor and apply for NSW and Commonwealth government grants to improve waste management outcomes for Georges River Council;

8. Undertake direct community consultation to inform the waste services tendered for after 2021;
9. Develop a contamination management procedure with the recycling collections and processing contractors to reduce contamination in the recycling bin (average contamination rate of 32.6%) and FOGO trial through the use of enforcement policies such as the 3-strike rule with a focus on MUDs;
10. Conduct a review to determine if the existing Georges River Council resources to combat illegal dumping are sufficient to meet the desired targets for the local environment detailed in the Community Strategic Plan including an assessment of the value for money of Council's partnership with the local Regional Illegal Dumping (RID) squad;
11. Conduct an assessment of Council's litter management infrastructure to prevent the occurrence of litter items and to capture them before entering the environment including a review to determine optimal placement and sufficient capacity of public place litter bins and gross pollutant traps;
12. Investigate user pay principles for residential and commercial waste collections (including additional household cleanup material collections) to incentivise waste minimisation;
13. Document and report the climate change benefits associated with capturing the embodied energy of recyclables and of diverting organics from landfill;
14. Develop a regional commercial food collection contract and develop local policies to maximise commercial food diversion from landfill;
15. Develop a regional policy and review collective procurement arrangements for alternative waste technologies (Anaerobic Digestion (AD), pyrolysis etc.) and EfW; and
16. Develop a regional Sustainable Procurement Policy with partners (SSROC) which requires minimum percentage recycled content in construction contracts, preferentially purchases local content (compost etc.) and imbeds recycled content (e.g. glass) into road building contracts.

How will the strategy be implemented?

- The strategy will be implemented in a staged manner, beginning with the most urgent actions. The need to allow the community to 'settle into' changes and plan for funding arrangements, also informed the staged implementation of the strategy.
- The detailed steps required for of the identified actions are listed in the Action Plan (Section 4.1).
- The timeline for the implementation of the identified actions is provided in the Implementation Timeline (Section 4.2).

How to measure success

- Success will be measured to ensure that the action plan is achieving the strategic objectives.
- It is proposed that progress reports be prepared on a six-monthly basis in the first two years, followed by annual progress reports, to summarise the progress made towards implementing the 2021 to 2025 action plan.
- The progress reports will assess the timeliness of implementation, measurable changes in waste performance (resource recovery and contamination rates), community response to implemented actions and the efficiency of spending.
- In 2025, Georges River Council will identify and assess the actions required in the next five years (2025 to 2030) to continue to improve waste management outcomes.

Glossary

Terminology	Description
ABS	Australian Bureau of Statistics
AD	Anaerobic Digestion
AWT	Alternative Waste Treatment
CDS	Container Deposit Scheme
CPI	Consumer Price Index
CRC	Community Recycling Centre
EfW	Energy from Waste
EPA	Environment Protection Authority
EPR	Extended Producer Responsibility
ERF	Emissions Reduction Fund
FOGO	Food Organics and Garden Organics
GO	Garden Organics
GEORGES RIVER COUNCIL	Georges River Council
KPI	Key Performance Indicator
LGA	Local Government Area
LSPS	Georges River Council Local Strategic Planning Statement 2040
MBT	Mechanical Biological Treatment
MRF	Materials Recovery Facility
MUD	Multi Unit Dwelling
MWOO	Mixed Waste Organic Outputs
NWP	National Waste Policy
POEO Act	Protection of the Environment Operations Act 1997
SSROC	Southern Sydney Regional Organisation of Councils
SUD	Single Unit Dwelling
TAC	Technical Advisory Committee
WARR	Waste Avoidance and Resource Recovery

Contents

Glossary	vi
Contents	vii
List of Tables	viii
List of Figures.....	viii
1 Where we are today.....	1
1.1 Population and demographics	1
1.2 Government policy and regulatory framework	2
1.2.1 National.....	2
1.2.2 State	5
1.3 Georges River Council policy and strategy framework.....	9
1.3.1 Georges River Local Strategic Planning Statement 2040.....	9
1.3.2 SSROC Regional Waste Avoidance and Resource Recovery Strategy	9
1.4 Waste and resource recovery collection summary.....	10
1.5 Waste and resource recovery contracts	12
1.6 Waste and resource recovery data, composition and performance	12
1.6.1 Waste and resource recovery data.....	12
1.6.2 Projected waste and recycling generation	14
1.6.3 Materials composition	17
1.6.4 Waste generation and recycling performance	25
1.7 Current and planned waste and recycling infrastructure	25
1.8 Programs, initiatives and community expectations.....	26
1.8.1 Education programs.....	26
1.8.2 Initiatives.....	27
1.8.3 Community expectations.....	27
2 Where do we want to get to?	28
2.1 Vision and themes.....	28
2.2 Strategic objectives	29
3 How will we get there?.....	30
3.1 Steps to develop action plan.....	30
3.2 Summary of options considered	31
3.3 Options assessment	35
3.4 Final list of actions.....	50
4 How will the strategy be implemented?	53
4.1 Action plan	53

4.2 Action plan implementation timeline	64
5 How will progress be measured	67
References	68
Appendix A Waste and recycling infrastructure	69
Appendix B Georges River Council Waste Education Programs	70
Appendix C Waste and recycling infrastructure overview	72

List of Tables

Table 1: Breakdown of occupied private dwellings in Georges River Council among different dwelling types (ABS, 2016)	2
Table 2: Metropolitan Waste Levy	5
Table 3: Summary of waste services provided to Georges River Council residents (Single Unit Dwelling, SUD; Multi Unit Dwelling, MUD) and businesses	11
Table 4: Georges River Council waste management contracts summary	12
Table 5: Georges River Council residential waste and recycling generation for single-unit and multi-unit dwellings	13
Table 6: Average number of CDS material disposed through Georges River Council comingled recycling and general waste collections	25
Table 7: Georges River Council waste and recycling performance	25
Table 8: Georges River Council waste strategy - strategic objectives	29
Table 9: List of ranked potential options for achieving the strategy's themes and objectives	31
Table 10: Options Assessment	35
Table 11: List of actions selected for the Georges River Council Waste Strategy (2021-2040)	50
Table 12: Action plan for Georges River Council Waste Strategy	53
Table 13: Georges River Council Waste Strategy - Implementation Timeline	64
Table 14: Georges River Council Waste Education Program Summary	70
Table 15: Waste and recycling infrastructure	72

List of Figures

Figure 1: Location of Georges River Council in Sydney, NSW	1
Figure 2: Georges River Council historic and projected population 2006 – 2040	2
Figure 3: Location of Southern Sydney Regional Organisation of Councils (SSROC) in Sydney, NSW	2
Figure 4: Waste Avoidance and Resource Recovery Act Waste Hierarchy	6
Figure 5: Household weekly waste generation 2008 – 2019	13
Figure 6: Georges River Council residential kerbside services tonnes per month July 2017 – June 2019	14
Figure 7: Georges River Council residential waste generation, recycling and disposal forecast (FY08-FY40)	15

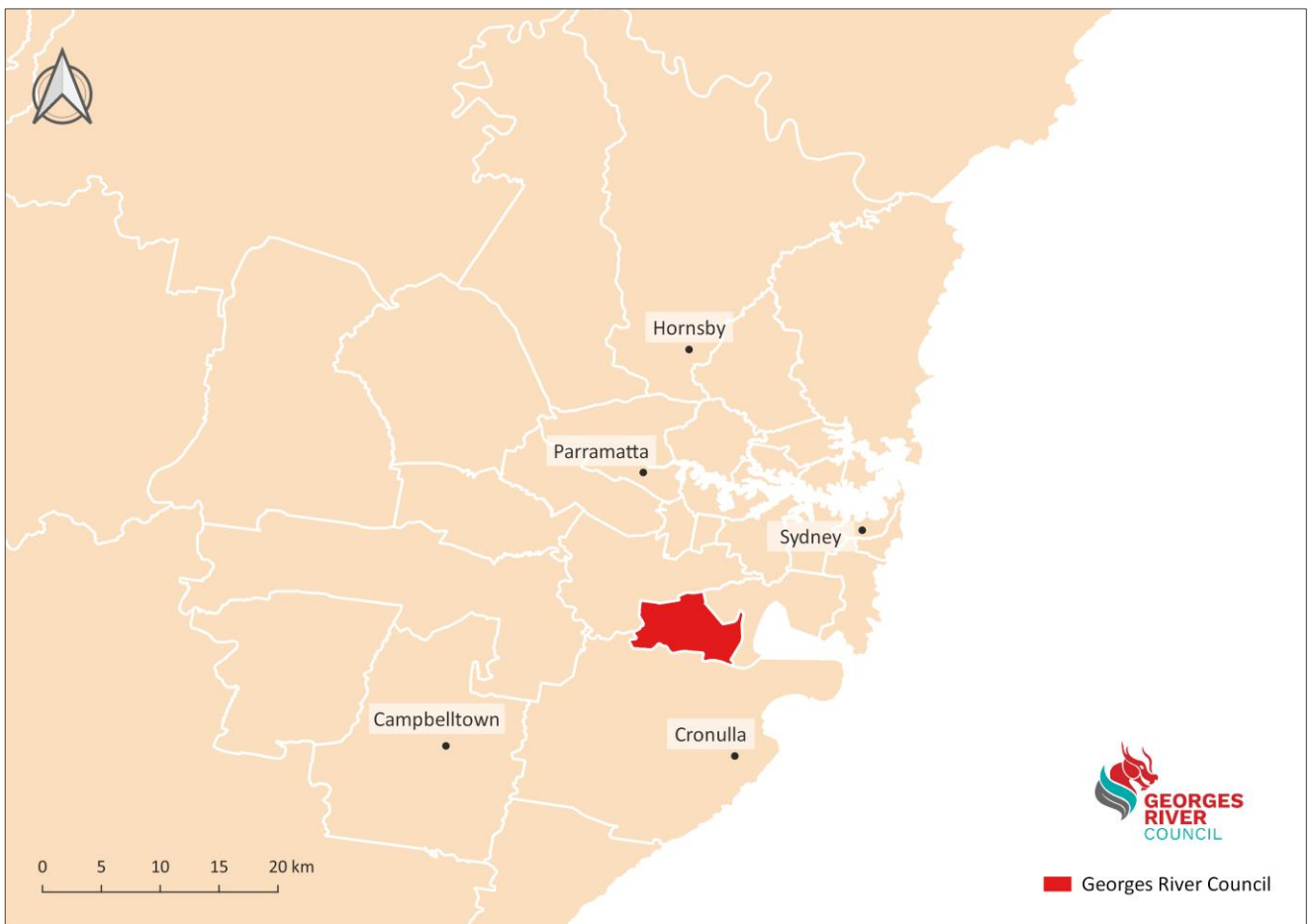
Figure 8: Georges River Council weekly household waste generation, recycling and disposal forecast (FY08 – FY40)	16
Figure 9: Georges River Council commercial waste generation forecast (FY15 – FY40)	17
Figure 10: General waste composition of Georges River Council compared to SSROC 2019	19
Figure 11: Summarised composition of Georges River Council residential general waste (both SUDs and MUDs).....	19
Figure 12: Summarised composition of Georges River Council residential SUDs general waste	20
Figure 13: Summarised composition of Georges River Council residential MUDs general waste.....	20
Figure 14: Comingled recycling composition Georges River Council compared to SSROC 2019	21
Figure 15: Summarised composition of Georges River Council residential comingled recycling (both SUDs and MUDs).....	22
Figure 16: Summarised composition of Georges River Council residential SUDs comingled recycling	22
Figure 17: Summarised composition of Georges River Council residential MUDs comingled recycling	22
Figure 18: Garden organics composition Georges River Council compared to SSROC 2019	23
Figure 19: Summarised composition of Georges River Council residential garden organics (both SUDs and MUDs).....	23
Figure 20: Summarised composition of Georges River Council residential SUDs garden organics	24
Figure 21: Summarised composition of Georges River Council residential MUDs garden organics.....	24
Figure 22: Georges River Council waste strategy vision and themes.....	28
Figure 23: Procedure applied to assess options and develop action plan	30

1 Where we are today

1.1 Population and demographics

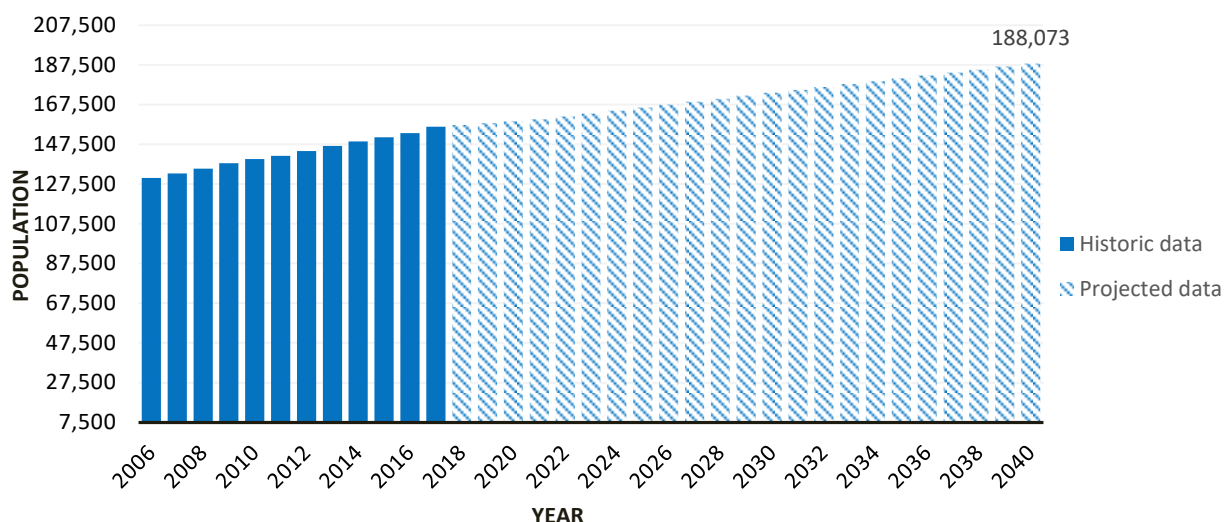
Georges River Council is a Local Government Area (LGA) covering approximately 38 square kilometres in the south of Sydney, NSW (Figure 1).

Figure 1: Location of Georges River Council in Sydney, NSW



The Australian Bureau of Statistics' (ABS) latest available dataset estimated Georges River Council's resident population at 156,293 in 2017, an increase of 25,707 people since 2006 (ABS, 2017). Resident population is estimated to grow to 188,000 people by 2040 (Figure 2). Current population density is 4,123 persons per square kilometre and is projected to be 4,903 persons per square kilometre by 2040. Particular areas of Georges River Council, such as the Kogarah North Precinct are planned to have higher levels of population density in the future.

Figure 2: Georges River Council historic and projected population 2006 – 2040



Source data: ABS (2017) and NSW Department of Planning and Environment (2016)¹

The average household size for Georges River Council is 2.9 persons and with 51,987 households in the LGA in 2016 (ABS, 2016). The breakdown of private dwelling types for 2016 is provided in Table 1. The increased development of residential dwellings especially within key precincts around the railway stations at Hurstville and Kogarah is expected to significantly increase the proportion of residents in Georges River Council that live in high-rise multi-unit dwellings (MUDs).

Table 1: Breakdown of occupied private dwellings in Georges River Council among different dwelling types (ABS, 2016)

Dwelling type	Proportion of occupied private dwellings
Single-unit (SUD)	53.8%
Semi-detached	11.6%
Multi-unit (MUD)	33.6%
Other	0.6%
Rounding difference	-0.3%

The median age of the Georges River Council population is 37 years (ABS, 2016). Georges River Council residents are culturally and linguistically diverse, with only 42% of the population speaking only English at home. The five most common languages spoken at home other than English in order of most to least prevalent are Mandarin, Cantonese, Greek, Arabic and Nepali (ABS, 2016). As Georges River Council residents come from a linguistically diverse background this makes it more challenging to educate residents to reduce contamination in their recycling and garden organics waste bins.

Georges River Council is currently drafting a new Local Environment Plan (LEP) and Development Control Plans (DCP) to standardise the planning controls across the LGA. There are currently multiple planning

¹ NSW Department of Planning and Environment project population until 2036. Projections from 2036 and 2040 have been extrapolated based on a linear growth rate of 0.8%, as seen between 2031 and 2036 projections.

instruments to follow depending on the location of the development and the waste management requirements vary widely across the region. The new LEP and DCP documents will establish clear waste management guidelines for each dwelling type which will be consistent for the whole Georges River Council region.

Georges River Council is a member of Southern Sydney Regional Organisation of Councils (SSROC). SSROC is a voluntary group of councils covering nearly 679 square kilometres in Sydney's southern suburbs, eastern suburbs, central business district, and inner west (Figure 3) with a combined population of approximately 1.6 million people (ABS, 2018).

SSROC allows for member councils (listed below) to approach problems, opportunities and challenges shared across the region as a co-operative which can pool resources to benefit the region as well as the individual member council and its community. SSROC has an active waste management working group which delivers improved waste management outcomes for the region, such as a joint tender for waste audit services and publishing a Regional Waste Avoidance and Resource Recovery Strategy.

SSROC member councils include:

- Bayside Council
- Burwood Council
- Canterbury Bankstown
- City of Canada Bay
- City of Sydney
- Georges River Council
- Inner West Council
- Randwick City Council
- Sutherland Shire Council
- Waverly Council
- Woollahra Municipal Council.

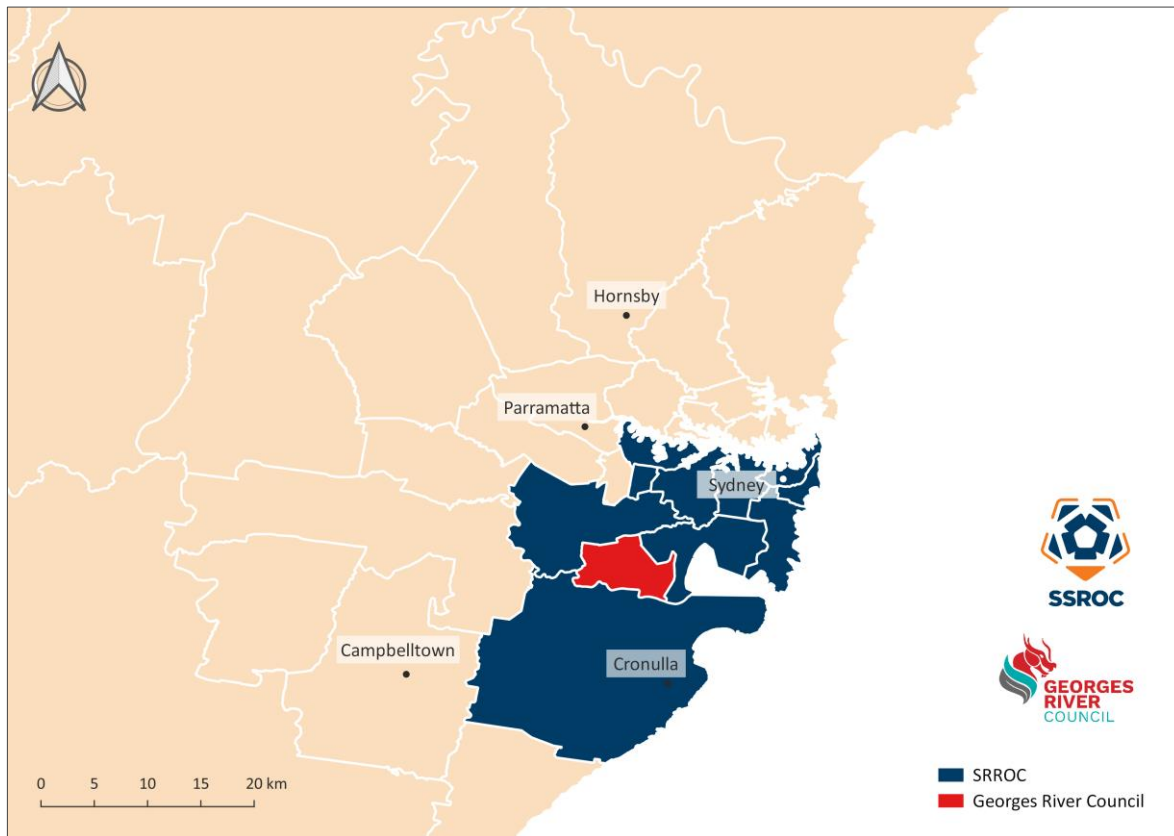


Figure 3: Location of Southern Sydney Regional Organisation of Councils (SSROC) in Sydney, NSW

1.2 Governance and regulatory framework

1.2.1 National

The Commonwealth Government has limited constitutional powers to engage directly in local waste management issues. This responsibility rests largely with State, Territory and local governments.

1.2.1.1 National Waste Policy

The Australian Government prepared a National Waste Policy (NWP) in 2018 to encourage a shift away from a linear economy and ‘take, make, use, dispose’ behaviours to a circular economy where the system maintains the value of resources for as long as possible². The policy provides five principles and fourteen strategies to underpin and guide waste management, recycling and resource recovery in a circular economy. The principles and strategies are non-binding. The policy does not set any resource recovery targets. The only area of measurable action from the 2018 NWP and 2009 NWP is in relation to Extended Producer Responsibility Schemes (EPR) (see section 1.2.1.2).

The Australian Government then published the National Action Plan³ which create targets and actions formulated in the 2018 NWP, including the waste export bans. The targets and actions detailed in the National Action Plan include the following:

² Commonwealth of Australia (2018), 2018 National Waste Policy: less waste more resources, <https://www.environment.gov.au/system/files/resources/d523f4e9-d958-466b-9fd1-3b7d6283f006/files/national-waste-policy-2018.pdf>

³ <https://www.environment.gov.au/protection/waste-resource-recovery/publications/national-waste-policy-action-plan>

- ban the export of waste plastic, paper, glass and tyres, commencing in early 2021;
- reduce total waste generated in Australia by 10% per person by 2030;
- 80% average recovery rate from all waste streams by 2030;
- significantly increase the use of recycled content by governments and industry;
- phase out problematic and unnecessary plastics by 2025;
- halve the amount of organic waste sent to landfill by 2030; and
- make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

The National Action Plan has set a high standard for resource recovery outcomes for the next 15 years, however, minimal federal funding has been announced to date to achieve these targets.

The Commonwealth Government announced in November 2019 that Australia will ban the export of waste plastic, paper, glass and tyres, that have not been processed into value added materials. The bans which have been legislated under the *Recycling and Waste Reduction Act 2020 (Cwth)* will be staged as follows:

- All waste glass by January 2021;
- Mixed waste plastics by July 2021 and unprocessed single plastic polymers by July 2022;
- All whole tyres including baled tyres by December 2021; and
- Remaining waste products, including mixed paper and cardboard, by no later than June 2024.

The waste export bans have the potential to impact on Georges River Council's comingled recycling in the short term, likely in the form of increased processing costs for the upcoming comingled recycling contract. Georges River Council's current comingled recycling collection contract states that Suez owns the contents of the comingled recycling bin once collected, hence Council is not impacted under the current contract.

1.2.1.2 Extended Producer Responsibility Schemes

EPR) policies engage producers and others involved in the supply chain of a product to take responsibility for the environmental, health and safety footprint of products they produce.

Following the adoption of the first NWP in 2009, the Commonwealth *Product Stewardship Act 2011* was introduced to provide the framework for EPR schemes. The Act creates three types of schemes:

- Mandatory schemes;
- Co-regulatory schemes; and
- Voluntary schemes (either accredited or not).

There are no mandatory schemes created under the Act, and one co-regulatory scheme (the National Television and Computer Recycling Scheme). Most EPR schemes are voluntary, and include programs for:

- Mobile phones (MobileMuster, an accredited scheme);
- Fluorescent lamps (Fluorocycle, an accredited scheme);
- Tyres (Tyre Stewardship Australia);
- Agricultural chemical containers (DrumMuster);
- Paint (Paintback);
- Used Oil (Product Stewardship for Oil Scheme – PSO);
- Mattresses (Soft Landing Product Stewardship Scheme);

- PVC (PVC Stewardship); and
- Newspapers.

The Commonwealth Government establishes a “product list” every year, containing the products that it is considering for some form of EPR scheme. The 2017-18 list includes:

- Plastic microbeads and products containing them;
- Batteries;
- Photovoltaic systems;
- Electrical and electronic products; and
- Plastic oil containers.

The Act is currently under review, including the “product list” process.

Georges River Council holds four Chemical CleanOut events over the course of six days each year to allow residents to dispose of unwanted chemicals, paints, oils and other hazardous items which cannot be placed in the kerbside bins at the Mortdale Depot. Many of the hazardous wastes collected at the Chemical CleanOut events are captured under the EPR schemes listed above such as Paintback for paints and Flurocycle for fluorescent lamps.

Many of these hazardous waste items can also be disposed of at the nearby Suez’s Rockdale Resource Recovery Facility or Suez’s Lucas Heights Resource Recovery Facility. Both of these facilities co-operate with the EPR scheme operators for the collection of these wastes.

Georges River Council offers a free tech-waste recycling service to residents, small businesses and schools every Saturday at Council’s Mortdale depot. Items such as televisions, laptops/computers, electrical cables and printers (including toner/ink cartridges) can be dropped off free of charge.

1.2.1.3 The Emissions Reduction Fund

The Commonwealth Government purchases lowest cost abatement (in the form of Australian Carbon Credit Units (ACCUs)) from a wide range of sources through the \$2.5 billion Emissions Reduction (ERF). This provides an incentive to businesses, households and landowners to reduce emissions.

In order to participate in the ERF, project proponents must carry out a project in accordance with a methodology determination to appropriately estimate abatement from certain activities.

Approved methods for the waste and recycling sectors include:

- Landfill gas capture and destruction;
- Alternative Waste Treatment (AWT)⁴; and
- Source Separated Organics.

The waste sector has provided a substantial amount of abatement under the ERF. ACCU’s would be generated from Georges River Council’s waste, which is processed at the Woodlawn Bioreactor AWT, however, under the current contract Council receives no benefit from the ERF for its waste activities.

⁴ This may be under review due to the NSW EPA’s position to no longer allow the use of Mixed Waste Organic Outputs (MWO) as a soil amendment on agricultural, mining rehabilitation or forestry land.

If Georges River Council were to implement a source separated organics program such as commercial food waste or residential food organics and garden organics (FOGO), Council may be able to negotiate with the waste services provider a share of potential benefits received from the ERF.

1.2.2 State

The NSW Government administers the waste regulatory framework through the State’s primary environment protection legislation, the *Protection of the Environment Operations (POEO) Act 1997*, together with the *Waste Avoidance and Resource Recovery (WARR) Act 2001* and the *Protection of the Environment Operations (Waste) Regulation 2014*. These key statutes contain the requirements for managing, storing, transporting, processing, recovering and disposing of waste.

1.2.2.1 Protection of the Environment Operations (POEO) Act 1997

The POEO Act aims to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote pollution prevention, the elimination of harmful wastes, the reduction in the use of materials and the re-use and recovery or recycling of materials.

All waste facilities utilised by Council need to be appropriately licensed under the POEO Act, and the onus of proof rests with waste generators (i.e. Council) to ensure that a site receiving its waste is appropriately licensed.

1.2.2.2 The Waste Levy

The Waste Levy applies to the regulated area of NSW, of which Georges River Council is included. Landfills in regulated areas are required to pay a contribution for each tonne of waste received at the facility. This aims to drive a reduction in the amount of waste being landfilled and promote recycling and resource recovery.

The Waste Levy is currently set at \$143.60/tonne. Under current regulations, the levy will increase every year in line with CPI. NSW’s waste levy is firstly allocated into consolidated revenue and later awarded to waste programs and the administration of the NSW EPA through funding bids to treasury. The key waste program in NSW is the \$802m Waste Less Recycle More (WLRM) program administered by the NSW EPA and NSW Environmental Trust. The WLRM program accounts for on average approximately \$100 million or 16% of the waste levy revenue per year since its introduction in 2012.

Table 2: Metropolitan Waste Levy

Period	Metro levy (per tonne)	Approximate waste levy paid by Council
2016-2017	\$135.70	\$ 1,967,115
2017-2018	\$138.20	\$ 5,061,846
2018-2019	\$141.20	\$ 4,835,390
2019-2020	\$143.60	Last financial year

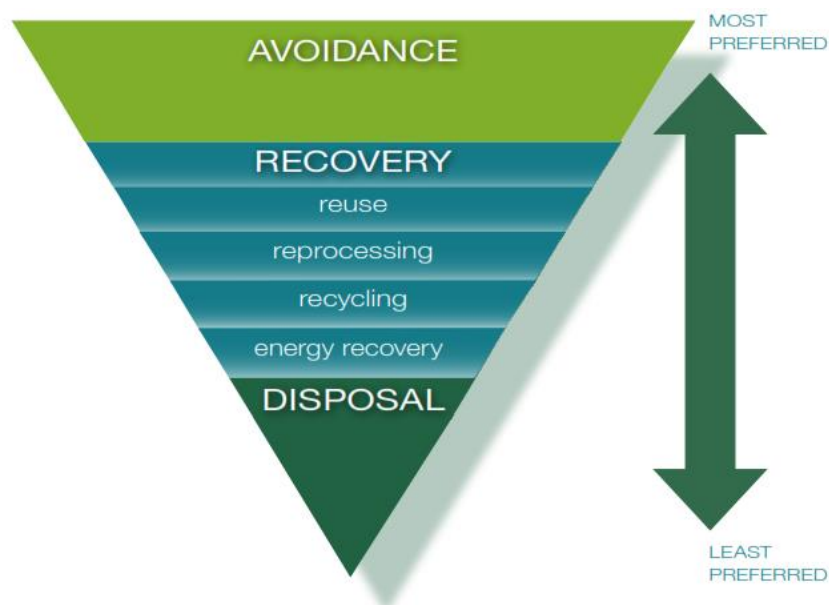
1.2.2.3 Waste Avoidance and Resource Recovery Act 2001

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) is the primary Act governing resource recovery in NSW. The objectives of the WARR Act are to promote:

- The most efficient use of resources, including resource recovery and waste avoidance;
- A reduction in environmental harm, including pollution through waste;
- A consideration of the resource management hierarchy through avoidance of unnecessary resource consumption and disposal; and
- Resource recovery, which includes reuse, reprocessing, recycling and energy recovery.

The WARR Act defines the Waste Hierarchy (Figure 4), which ranks waste management options in order of general environmental desirability. Generally, the higher waste is managed up the hierarchy, the lower the impact and risk to the environment and communities. The waste hierarchy is intended for use alongside other assessment tools, such as cost benefit analysis, to guide decision-making.

Figure 4: Waste Avoidance and Resource Recovery Act Waste Hierarchy



Source: *Waste Avoidance and Resource Recovery Act 2001*

1.2.2.4 NSW Waste Avoidance and Resource Recovery Strategy 2014–21

The NSW Waste Avoidance and Resource Recovery Strategy 2014–21 (WARR Strategy) provides a framework for waste management in NSW. Development of a WARR Strategy, including targets for waste reduction, resource recovery and the diversion of waste from landfill disposal, is required under the WARR Act.

The following targets have been set to be achieved by 2021/22:

- Avoiding and reducing the amount of waste generated per person in NSW;
- Increasing recycling rates to 70% for municipal solid waste;
- Increasing recycling rates to 70% for commercial and industrial waste;

- Increasing recycling rates to 80% for construction and demolition waste;
- Increasing waste diverted from landfill to 75%;
- Managing problem waste better, establishing 86 drop-off facilities and services across NSW;
- Reducing litter, with 40% fewer items (compared to 2012) by 2017; and
- Combating illegal dumping, with 30% fewer incidents (compared to 2011) by 2017.

The WARR Strategy guides the development of Council's resource recovery targets. Council will also keep abreast of developments in Waste Less Recycle More (WLRM) funding and have the opportunity to apply for funding to support and augment any of the described actions in order to achieve its objectives more efficiently.

1.2.2.5 NSW 20-Year Waste Strategy

The NSW Government is currently developing a new *20-Year Waste Strategy for NSW* which will set new targets and new waste initiatives out to 2040, the draft strategy is expected to be published in the first half of 2021. The discussion paper the *20-Year Waste Strategy for NSW* has set four key directions for the new strategy which are:

1. Generate less waste by avoiding and 'designing out' waste, to keep materials circulating in the economy.
2. Improve collection and sorting to maximise circular economy outcomes and lower costs.
3. Plan for future infrastructure by ensuring the right infrastructure is located in the right place and at the right time.
4. Create end markets by fostering demand for recycled products in NSW (particularly glass, paper, organics, plastics and metals) so that recovered materials re-enter our economy and drive business and employment opportunities.

1.2.2.6 Waste Less Recycle More Initiative

The WLRM grant program provides funding for organisations to improve their management of waste and recovery of resources.

Phase 1 of WLRM provided \$465.7 million over the period July 2012 to June 2017, focusing on funding new, large-scale waste and recycling infrastructure, recycling facility upgrades, drop off centres, food and garden organics processing and recycling innovations. Phase 2 of WLRM commenced on 1 July 2017, with the capacity to award \$337 million over 4 years. Priorities have already been outlined with a number of funding areas being potentially relevant to Council:

- Local government waste and resource recovery – \$70 million;
- Illegal dumping prevention and waste enforcement – \$65 million;
- Household problem waste – \$57 million;
- Waste and recycling infrastructure – \$48 million;
- Organics infrastructure – \$35.5 million;
- Litter prevention and enforcement – \$30 million;
- Business recycling – \$22.5 million;
- Recycling innovation – \$5 million; and
- Heads of Asbestos Co-ordinating Authorities – \$4 million.

1.2.2.7 Waste and Resource Recovery (Container Deposit Scheme) Regulation 2017

The *Waste and Resource Recovery (Container Deposit Scheme) Regulation 2017* provides the framework for the implementation and operation of the Container Deposit Scheme (CDS), established under Part 5 of the WARR Act, which was implemented on 1 December 2017.

The CDS is a product stewardship scheme for eligible beverage containers. Under the scheme, a deposit of 10c/container is refunded to consumers in return for eligible beverage containers sold in NSW. The CDS only covers a selection of beverage containers (eligible containers), specifically those that are typically consumed away from home and likely to end up as litter. This deposit can be redeemed by presenting eligible containers at designated collection depots. The Scheme Coordinator (Exchange for Change) manage scheme payments, establish key agreements required for the operation of the scheme, conduct auditing and verification. The Network Operator (TOMRA-Cleanaway) establishes and manages Collection Points and ensures redeemed beverage containers are ultimately recycled.

Georges River Council has one Return and Earn Reverse Vending Machine at Carss Bush Park, Carss Park. One additional Return and Earn Reverse Vending Machines is planned for the local area.

Georges River Council agreed to a 50:50 split of the CDS refunds for all co-mingled recycling tonnages collected and processed by Suez for Council from August 2019. The legislation relating to CDS provides for MRF operators to claim refunds for the eligible containers processed via kerbside recycling. The two methods for estimating the number of eligible containers processed are:

- a. The weighing method; and
- b. The direct count method.

Suez uses the weighing method to claim refunds for eligible containers. Where a MRF operator makes a refund claim using the weighing method, the estimated number of eligible containers processed is based on the weight of the output material type delivered from the MRF for reuse or recycling and the eligible container factor (ECF) for the material. The EPA determines the ECFs for each quarter based on a range of data, but predominantly from the sampling of MRFs. These ECFs are then applicable to all MRFs in NSW claiming refunds using the weighing method. Therefore, whilst CDS audits can provide an indication of the change of CDS eligible containers placed in the recycling bin or general waste bin it does not directly relate to the expected CDS refund for Georges River Council. Any future comingled recycling contracts should include an equitable mechanism to ensure an appropriate level of risk-sharing between Georges River Council and the nominated processor.

1.2.2.8 Changes to use of Mixed Waste Organic Outputs (MWOO)

Alternative Waste Treatment (AWT) or Mechanical Biological Treatment (MBT) facilities process mixed waste or garbage from municipal and sometimes commercial sources. Their main product output is a compost-like material known as 'mixed waste organic outputs' (MWOO), which have been generally used in mine rehabilitation, forestry plantations and agriculture in NSW. Georges River Council general waste collected from the former Kogarah Council area is contracted to be processed by the Veolia MBT in Woodlawn (near Goulburn) via rail from the Banksmeadow Transfer Station.

In May 2018, a Technical Advisory Committee (TAC) convened by the NSW Environment Protection Authority (EPA) recommended that MWOO was not suitable for use on broadacre agricultural or

horticultural soils (TAC 2018). As a result, in October 2018, the EPA changed its regulations to temporarily prohibit the application of MWOO to land, having the effect of driving it to landfill. The EPA was continuing the review process into the application of MWOO to land until October 2019 when it announced that it does not intend to allow MWOO to be applied to land on agricultural, mining and forestry land.

The NSW Government has since October 2018 provided funding to minimise risks in disruptions to kerbside collection services and ensure additional costs caused by the ban do not impact councils and ratepayers. The NSW Government has guaranteed to continue this funding until May 2021. If the funding is terminated, disposal costs will significantly increase and Georges River Council may need to renegotiate their AWT processing contract for former Kogarah residents.

As part of this announcement the NSW EPA presented a \$6.5 million package for funding to investigate and develop new products from MWOO or to facilitate the transition of the AWT/MBT facilities to FOGO processing facilities. If the AWT/MBT facilities were to transition to FOGO processing facilities, Georges River Council would need to transition the current garden organics kerbside service to a FOGO service. For Georges River Council to transition to a FOGO kerbside service, Council would need to implement a thorough education program to residents and businesses (using the kerbside service) on the changes.

1.3 Georges River Council policy and strategy framework

1.3.1 Georges River Local Strategic Planning Statement 2040

Georges River Council has articulated its long-term vision for the Georges River Area after consultation with the community to develop the Georges River Local Strategic Planning Statement 2040. The Statement details five strategic themes and planning priorities shaped by the community to guide Georges River Council's goals and operations moving forward. The five themes are:

1. Access and Movement;
2. Infrastructure and Community;
3. Housing and Neighborhoods;
4. Economy and Centres; and
5. Environment and Open Space.

Waste management and recycling targets and strategies are mostly captured under the Environment and Open Space theme. The main target for Georges River Council's waste management and recycling operations is to increase the "proportion of all waste diverted from landfill to at least 70%" from a current baseline of 52%. The Georges River Council Local Strategic Planning Statement 2040 states the baseline was 52%, however, due to the ban of MWOO products being applied to land (Section 1.2.2.8), the landfill diversion rate has dropped to 41%.

1.3.2 SSROC Regional Waste Avoidance and Resource Recovery Strategy

In 2017, SSROC was provided funding by the NSW EPA to update the Regional Waste Avoidance and Resource Recovery Strategy which was originally prepared in 2013. This strategy details the framework to 2021 for the member councils of SSROC to reduce waste, increase recycling and recovery rates, and address illegal dumping, litter and problem waste. The strategy details five key strategic actions to improve waste management and recycling outcomes for SSROC and its member councils; these five actions are:

1. Avoiding and Reducing Waste;

2. Recovering Resources;
3. A Healthy Region;
4. Reducing Illegal Dumping; and
5. Litter Prevention.

Georges River Council is fully supportive of SSROC initiatives and actions highlighted above to improve waste management services for the region through combined procurement to maximise contract outcomes and engage waste management companies to invest in best practice infrastructure. Georges River Council as a member council of SSROC will allow for additional investment into research and education for local businesses and residents in areas such as waste avoidance.

Two examples of Council working with SSROC is the new kerbside clean-up materials processing contract and the joint procurement of kerbside bin audits. Georges River Council is adding their buying power with other SSROC councils in order to maximise the resource recovery potential and ensure Council achieves value for money for the new kerbside clean-up materials contract term.

1.4 Waste and resource recovery collection summary

Georges River Council provides a kerbside collection service to residents and some businesses in the LGA for general waste, recycling waste, garden organics waste and household clean-up materials. In September 2019, this included approximately 54,000 households (32,500 SUDs and 21,500 MUDs) each assumed to have one bin per waste stream, and 1,902 businesses. Table 3 summarises the kerbside waste collection services provided by Georges River Council.

In addition, all residents have access to a drop-off service for tech waste every Saturday at Council's Mortdale Depot and a Return and Earn Reverse Vending Machine at Carss Bush Park. Residents can also dispose of household chemicals through the four Chemical CleanOut events that are held over six days per year.

MRA has utilised the Georges River Council dataset for the purpose of developing this Waste Strategy.

Table 3: Summary of waste services provided to Georges River Council residents (Single Unit Dwelling, SUD; Multi Unit Dwelling, MUD) and businesses

Collection service	User	Tonnes collected (FY 2018-19)	Bin size options	Service frequency	Collector
Garbage	SUD	28,354	120L 240L	Weekly	Suez
	MUD		660L Kogarah 1100L Hurstville and Kogarah	Twice weekly for former Hurstville Weekly for former Kogarah	
	Business	2,132	240L 1100L	Up to twice weekly for former Hurstville Weekly for former Kogarah	
Comingled recycling	SUD	11,912	240L	Fortnightly	Suez
	MUD		240L	Weekly	
	Businesses (optional for Hurstville)	Not distinguishable	240L	Weekly	
Garden organics	SUD	11,751	240L	Fortnightly	Suez
	MUD (on request)		240L	Fortnightly	
Kerbside clean-up materials	SUD & MUD	5,890	3 m ³ pile	Twice per year	Suez

1.5 Waste and resource recovery contracts

Georges River Council administers a number of contracts for the collection, processing and disposal of their numerous waste streams. The following contracts are currently in place (Table 4):

Table 4: Georges River Council waste management contracts summary

Contract Description	Operator	Expiration Date
Collections contract for all residential and commercial waste services across Georges River Council ⁵	Suez	2023
Processing and disposal contract for general waste from former Hurstville only, organics from all Georges River Council, and litter from former Kogarah only	Suez	2023
Processing and disposal contract for general waste from former Kogarah	Veolia	2027
Processing and disposal contract for household clean-up materials from Georges River Council	Bingo	2027
Collection and processing of public place litter bins	Suez	2023

1.6 Waste and resource recovery data, composition and performance

1.6.1 Waste and resource recovery data

Residential waste collections

In financial year 2018-19, Georges River Council collected approximately 57,900 tonnes of waste through residential kerbside collections of which approximately 23,600 tonnes was recycled (comingled recycling and garden organics). Former Kogarah residential garbage is contracted for processing at Veolia's AWT facility at Woodlawn (near Goulburn) via the Banksmeadow Transfer Station. The recent EPA ban on the application of AWT organics to land is likely to have an impact on this contractual relationship unless Veolia can secure a special exemption for the use of this material. Former Hurstville residential garbage is disposed at the Lucas Heights Smart Cell landfill operated by Suez.

As identified in a 2019 kerbside waste audit, weekly household generation of general waste, comingled recycling and garden organics differs greatly between SUDs and MUDs in Georges River Council (APC, 2019). Table 5 shows the breakdown of weekly household general waste, comingled recycling and garden organics generation for both dwelling types. General waste generation represents over half the total waste generation from both SUDs and MUDs by weight. This highlights the opportunity to remove further recyclable material from the general waste stream by working with residents to encourage greater use of the comingled recycling and garden organics bin.

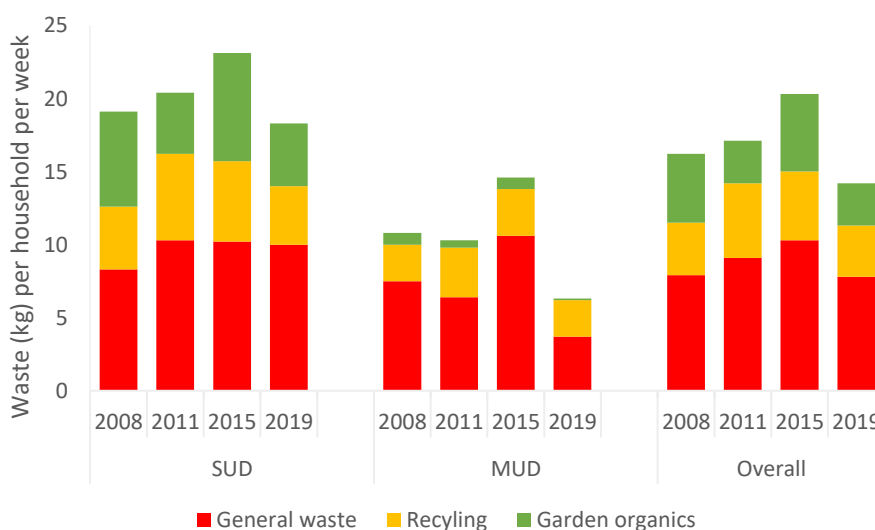
⁵ GEORGES RIVER COUNCIL does not have a processing contract for the comingled recycling waste stream because under the comingled recycling collection contract Suez owns the contents of the comingled recycling bins once collected. This contract insulates GEORGES RIVER COUNCIL from any increases in processing costs due to the reduction of value of recycled commodities e.g. significant comingled recycling processing costs due to China National Sword waste import regulation changes.

Table 5: Georges River Council residential waste and recycling generation for single-unit and multi-unit dwellings

Waste type	Single-unit dwelling	Multi-unit dwelling
	Kilograms per household per week	
General waste	10.0	3.7
Comingled recycling	4.0	2.5
Garden organics	4.3	0.1
Total	18.3	6.3

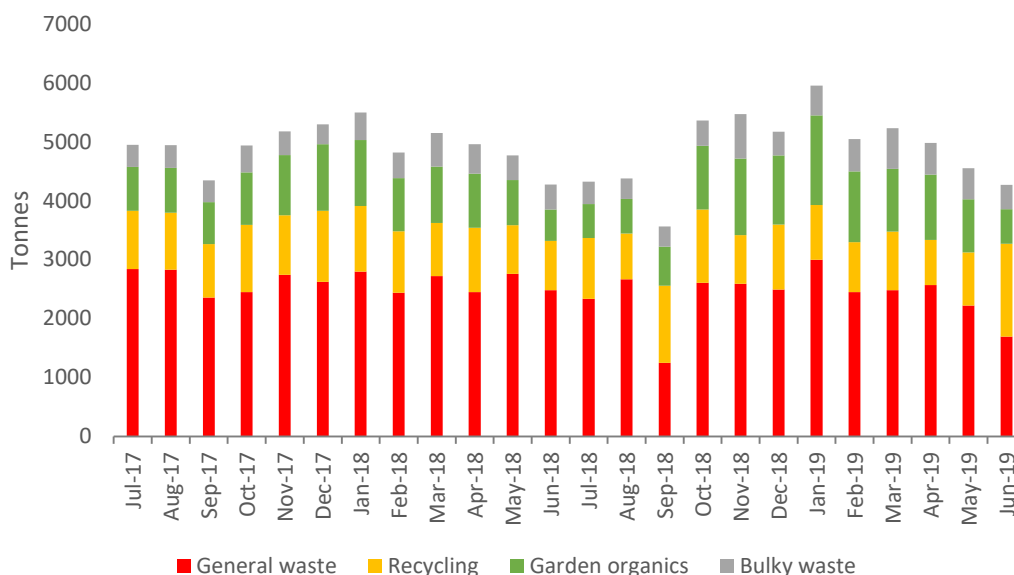
When compared to previous kerbside waste audits, the quantity of comingled recycling and garden organics collected per household per week has decreased since 2008 across both MUDs and SUDs (APC, 2019; Figure 5). General waste has remained approximately constant in SUDs and decreased in MUDs by approximately 65% since 2015.

Figure 5: Household weekly waste generation 2008 – 2019



Seasonal fluctuations in garden organics are seen in Georges River Council, with higher generation observed in summer months compared to winter months for the past two financial years (Figure 6).

Figure 6: Georges River Council residential kerbside services tonnes per month July 2017 – June 2019



1.6.2 Projected waste and recycling generation

Residential waste and recycling generation has been projected for Georges River Council to FY40 using:

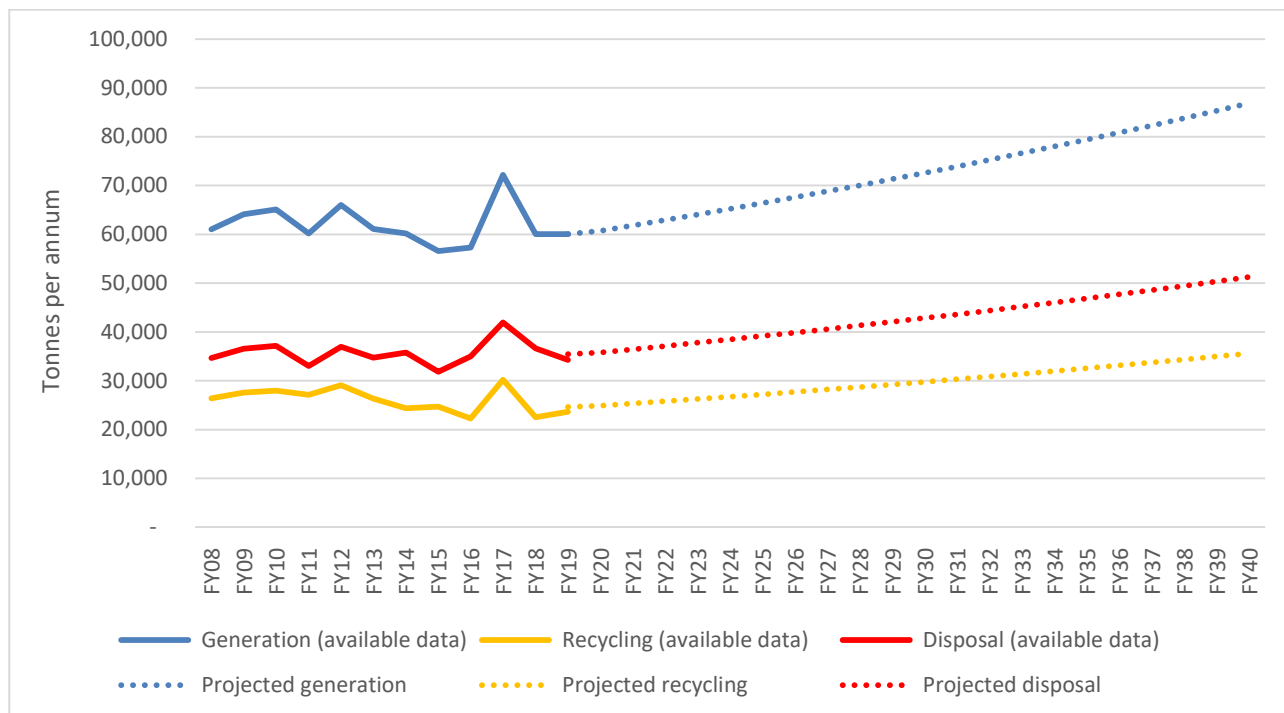
- The rate of household growth in Georges River Council; and
- The rate of growth of waste generation (kg per household per week) for Georges River Council from FY08 to FY18.

These projections estimate that waste generation for Georges River Council residents in FY20 (1 July 2019 – 30 June 2020) will be approximately 60,687 tonnes and will reach approximately 86,836 tonnes per annum by FY40, and recycling generation for residents will be 24,882 tonnes in FY20, reaching 35,603 tonnes in FY40 (Figure 7).

It should be stressed that these are theoretical projections based upon average growth rates of waste generation (kg per household per week) in Georges River Council from FY08 to FY18. In recent years, the rate has declined and so this average growth rate may not adequately reflect the impact of State and Local Government waste reduction campaigns. The forecast should be revisited regularly and reviewed in terms of actual growth rates experienced in the future when longer term data becomes available.

There is current uncertainty around government policy relating to resource recovery for materials processed at Alternative Waste Treatment facilities. Therefore, for the purposes of projecting Georges River Council disposal and recycling, it has been assumed that all general waste will go to landfill.

Figure 7: Georges River Council residential waste generation, recycling and disposal forecast (FY08-FY40)



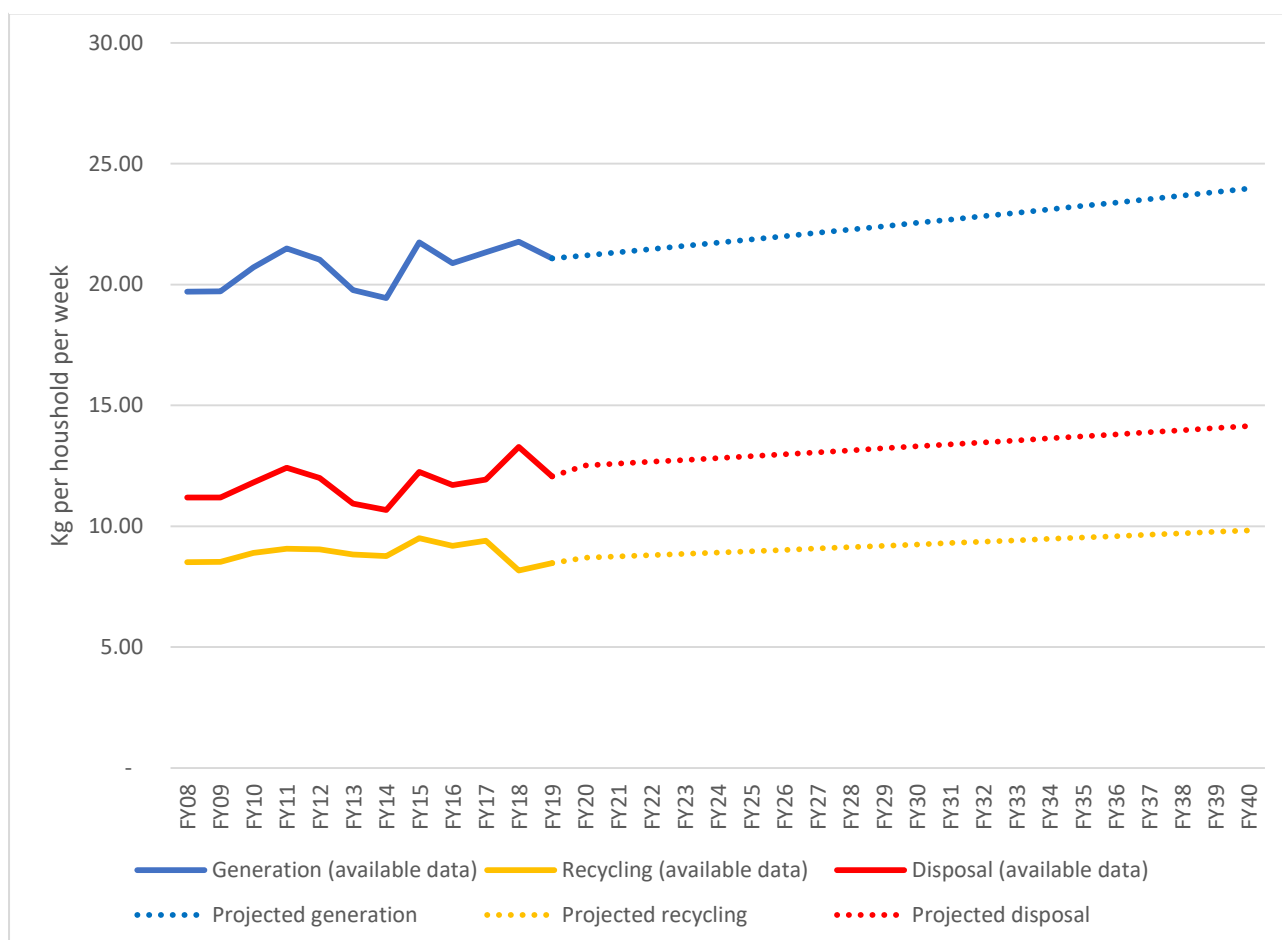
Data source and model assumptions:

- Baseline data for FY18 – FY19 was provided by Georges River Council. Baseline data for FY08 to FY17 is from the NSW EPA Local Government Waste and Resource Recovery Data Reports for former Hurstville and Kogarah for 2014-15.
- Waste and recycling generation projections are based on projected household growth of 1.2% population growth of 1.1% per year for Georges River Council (.id – Georges River Council forecasts⁶).
- These datasets show that tonnes of waste generated per person is increasing by 0.6% per year and MRA has assumed that the recycling and disposal rates will remain at 41% and 59% respectively.

Waste generation, recycling and disposal projections on a per household per week basis are presented in Figure 8. By FY20, the average household is projected to generate 21kg of waste per week, of which almost 9kg will be recycled through comingled recycling and organics collections. By FY40, the average household is projected to generate 24kg of waste and almost 10kg of recycling per week.

⁶ <https://forecast.id.com.au/georges-river/population-households-dwellings>

Figure 8: Georges River Council weekly household waste generation, recycling and disposal forecast (FY08 – FY40)



Commercial waste collections

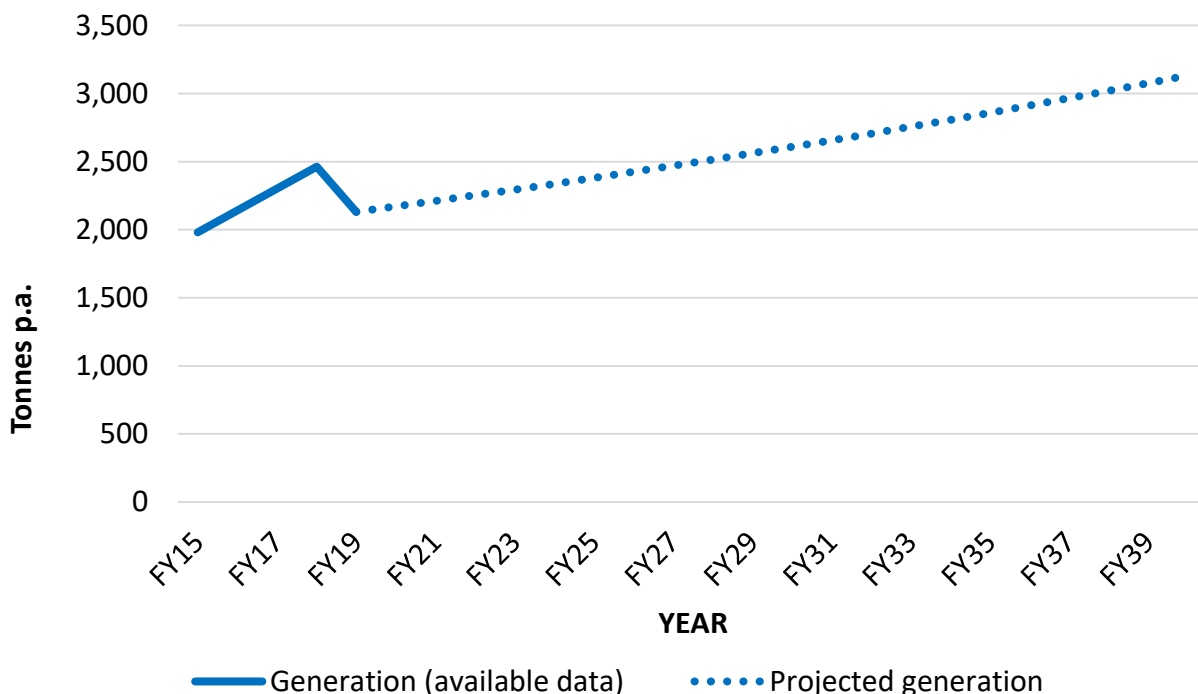
In financial year 2019, Georges River Council collected approximately 2,132 tonnes of waste through commercial kerbside collections.

Commercial waste generation has been projected for Georges River Council using:

- The rate of waste tonnage growth from businesses in Georges River Council from FY15 to FY19.

These projections estimate that waste generation for Georges River Council commercial collections in Financial Year 2020 (1 July 2019 – 30 June 2020) will be approximately 2,170 tonnes and will reach approximately 3,130 tonnes per annum by FY40 (Figure 9).

Figure 9: Georges River Council commercial waste generation forecast (FY15 – FY40)



Data source and model assumptions:

- *Baseline data for FY18 – FY19 was provided by Georges River Council. Baseline data for FY15 was based on the Waste Avoidance and Resource Recovery Strategy Dataset for former Hurstville and Kogarah for 2014-15, with commercial general waste generated assumed to be equal to 7.5% of residential general waste collected.*
- *The projection is based on the trend in waste generation observed from FY15 – FY19 data, which is a 1.85% increase in tonnes of waste generated per year.*

1.6.3 Materials composition

SSROC commissioned a compositional audit of Georges River Council residential general waste, recycling and garden organics in 2019. The audit was undertaken over six days in May – June 2019.⁷ The composition of waste and recycling streams are presented below.

Key findings from the audit:

- The largest proportion of general waste is 37.7% of loose/uncontainerised food.
- The proportion of food waste and recyclable materials in the general waste stream has been reducing since 2005.
- The quantity of recyclable containers collected in comingled recycling has decreased since the last audit in 2015, likely due to the introduction of the Return and Earn Scheme in NSW in December 2017.

⁷ SSROC Kerbside Waste Audit Georges River Council Report, September 2019, Prepared by A. Prince Consulting

- Contamination in comingled recycling has increased slightly for both SUDs and MUDs since the last audit in 2015.
- Improved landfill diversion could be achieved through the existing recycling and garden organics services via correct disposal of recyclable containers, recyclable paper and vegetation currently making up 11% of general waste.
- 32% of SUD and 15% of MUD general bins were full or overflowing.
- Contamination in comingled recycling is 32.6% on average, 28.7% for SUDs and 44.9% for MUDs.
- 32% of SUD and 27% of MUD comingled recycling bins were full or overflowing.
- Contamination in garden organics is 0.7% on average, 0.6% for SUDs and 7.6% for MUDs.
- 39% of SUD bins and 0.0% of MUD garden organics bins were full or overflowing.
- The calorific value of general waste from Georges River Council is estimated at 445 terajoules per year.

1.6.3.1 General waste composition

A summary of the composition of Georges River Council's residential general waste is provided in Figure 10, along with the average composition of general waste across SSROC councils. A summary of the composition of Council's residential general waste is provided in the Figures below for the whole LGA (Figure 11), SUDs only (Figure 12), and MUDs only (Figure 13). The largest single proportion of materials in the general waste bin for Georges River Council across SUDs and MUDs was loose food waste.

Approximately 11% of the general waste stream could be recycled through existing kerbside comingled recycling and garden organics services. If Georges River Council were to introduce a FOGO service, further improvements to landfill diversion can be expected with approximately 49% of the general waste stream recovered through the existing kerbside comingled recycling and new FOGO bin.

Figure 10: General waste composition of Georges River Council compared to SSROC 2019

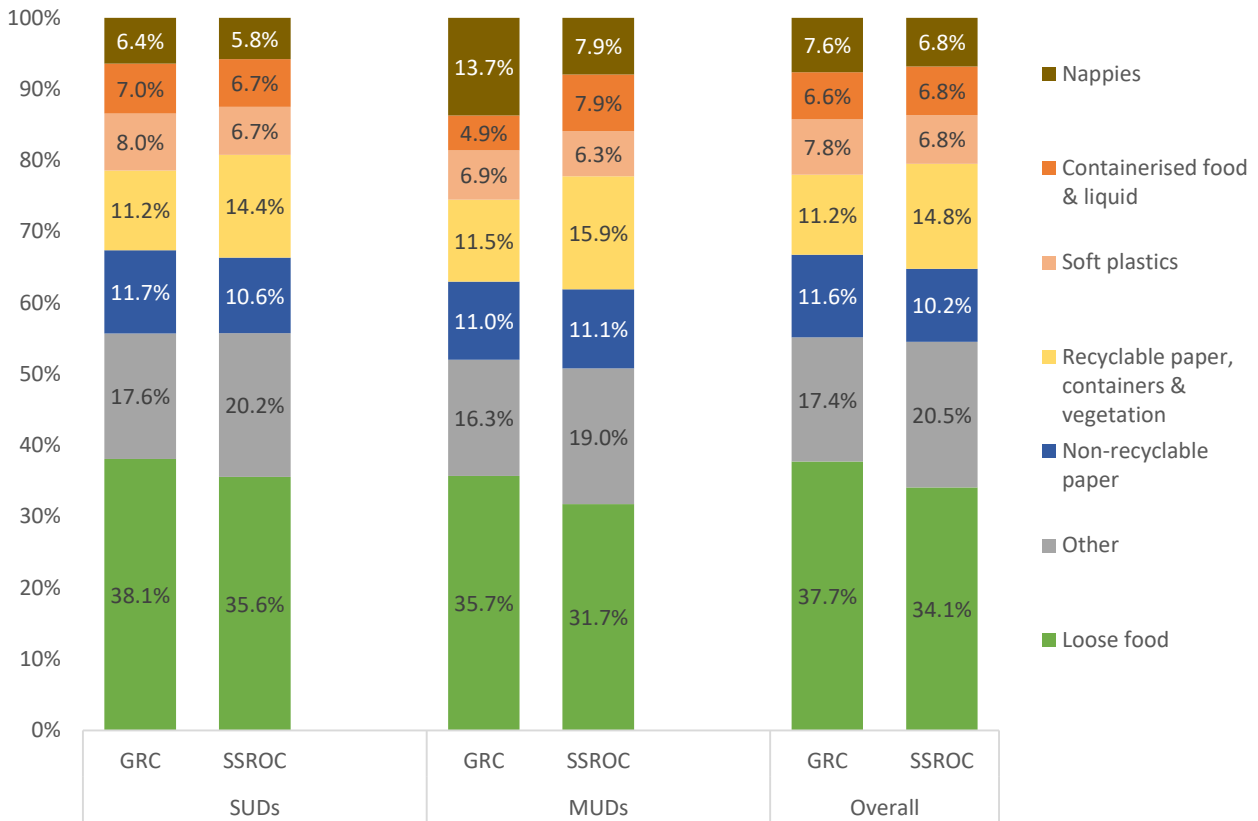


Figure 11: Summarised composition of Georges River Council residential general waste (both SUDs and MUDs)

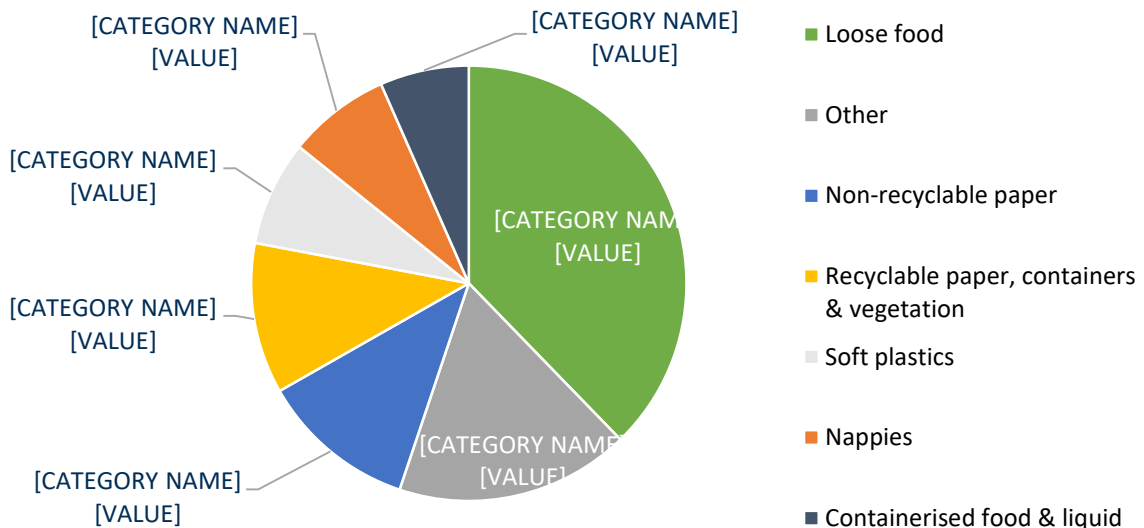


Figure 12: Summarised composition of Georges River Council residential SUDs general waste

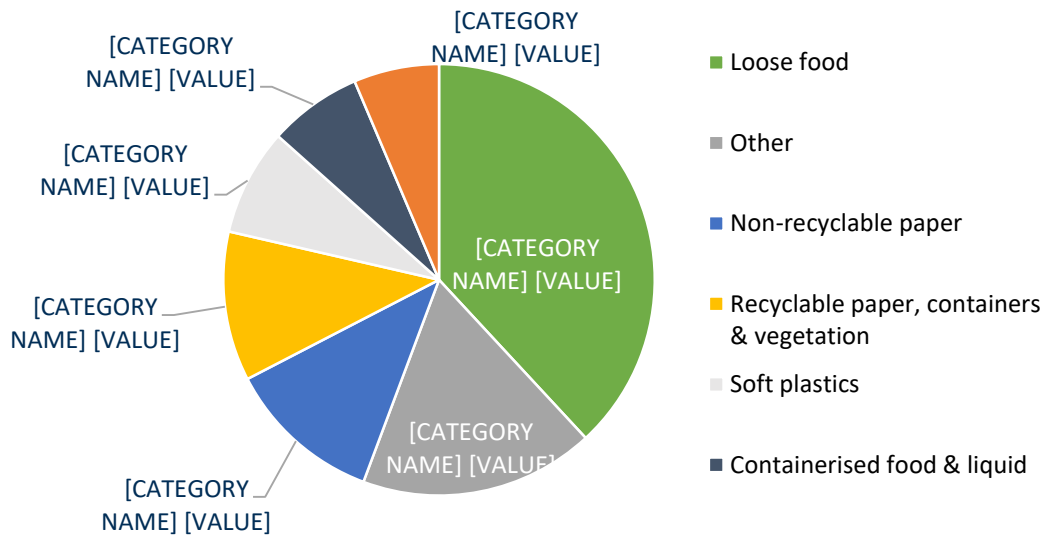
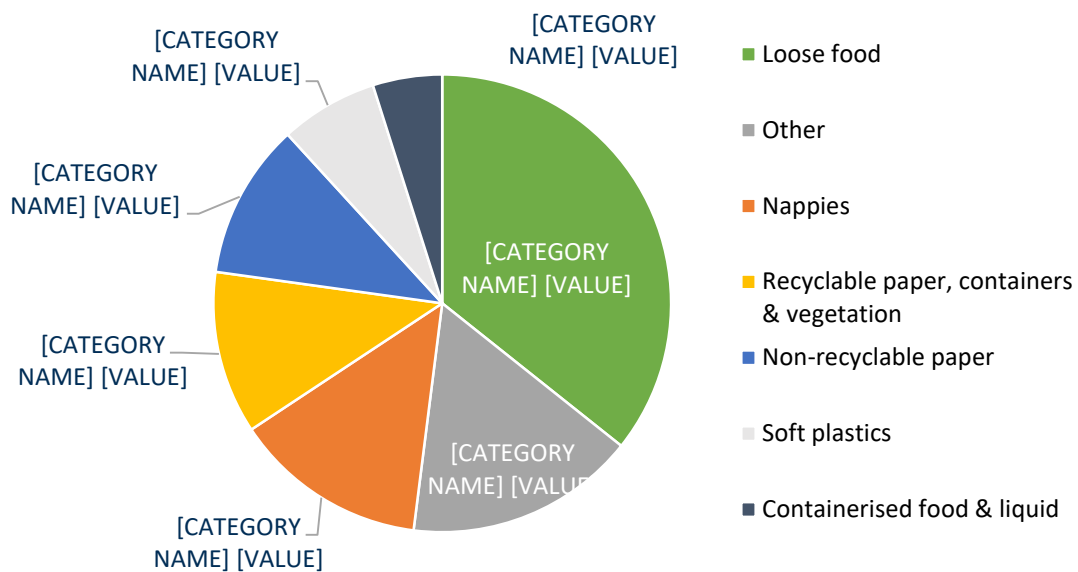


Figure 13: Summarised composition of Georges River Council residential MUDs general waste



1.6.3.2 Comingled recycling composition

A summary of the composition of Georges River Council’s residential comingled recycling is provided in Figure 14, along with the average composition of comingled recycling across SSROC councils. A summary of the composition of Council’s residential comingled recycling is provided in the Figures below for the whole LGA (Figure 15), SUDs only (Figure 16), and MUDs only (Figure 17). In both SUDs and MUDs, the largest proportion was recyclable paper. There was considerable contamination in both dwelling types, but especially high in MUDs with approximately 45% made up of bagged material and contamination. Under Georges River Council’s current comingled recycling collections contract, there is no financial incentive for Council to invest in reducing contamination, for example through education programs or bin stickering, as

Suez owns the contents of the comingled bin once collected and there are no financial penalties for contamination.

However, this arrangement would be unlikely to be included in a new contract post 2023 as the processing costs have seen significant increase following the China National Sword reforms, and may increase further due to the Australian Commonwealth Government’s incoming export ban on unprocessed plastic, fibre (paper and cardboard) and glass waste. It is very unlikely that waste service providers would enter into new comingled recycling collection or processing contracts without including financial penalties for contamination rates over a set percentage, unless councils were prepared to accept much higher processing costs.

Figure 14: Comingled recycling composition Georges River Council compared to SSROC 2019

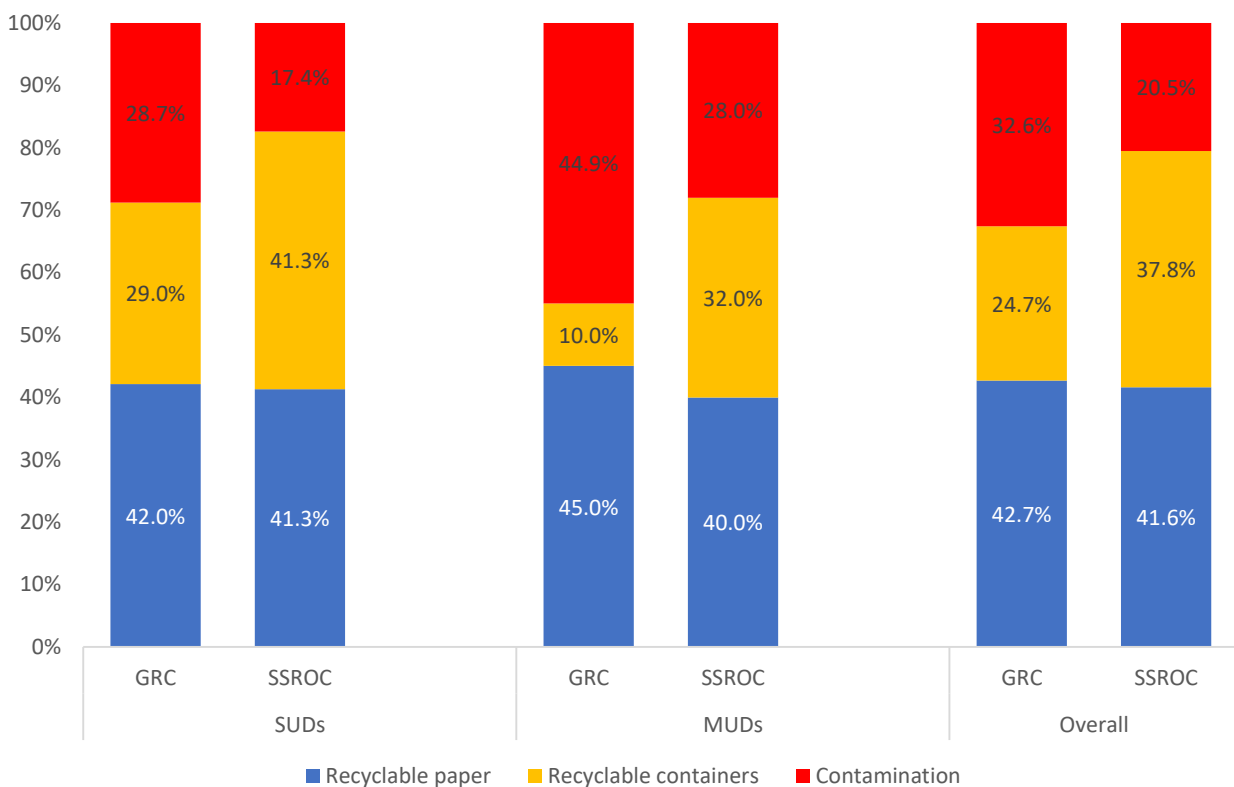


Figure 15: Summarised composition of Georges River Council residential comingled recycling (both SUDs and MUDs)

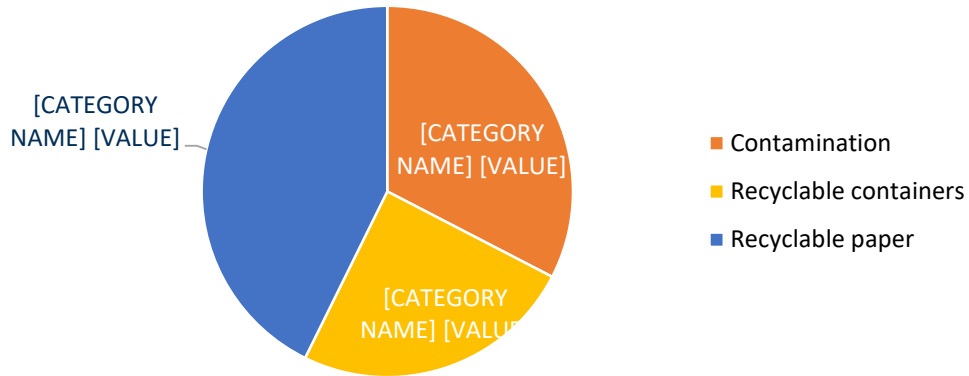


Figure 16: Summarised composition of Georges River Council residential SUDs comingled recycling

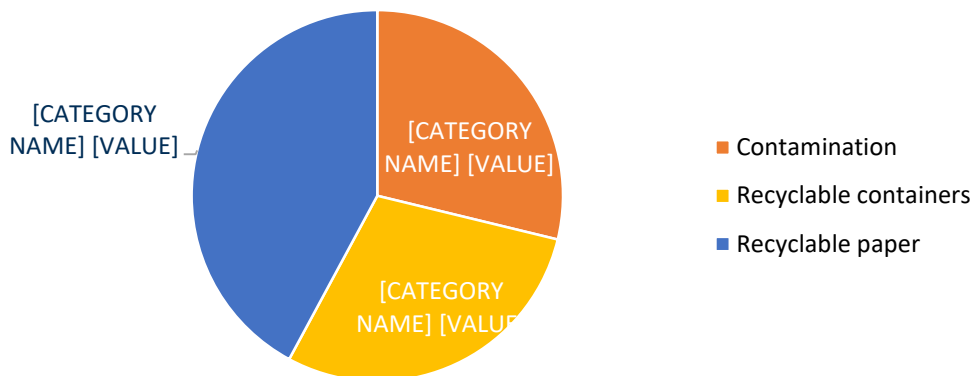
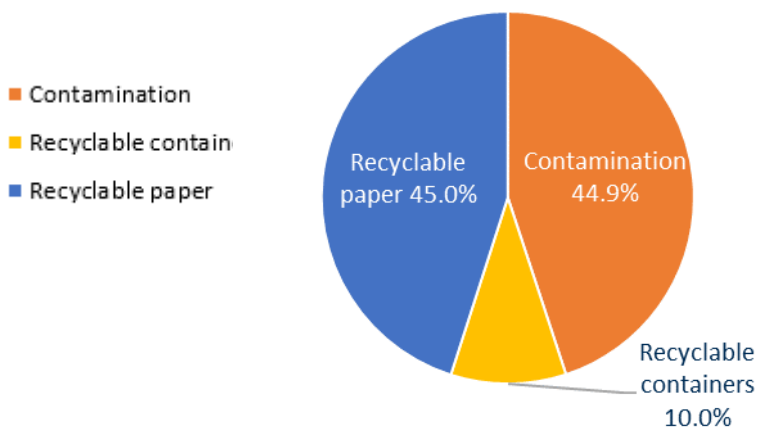


Figure 17: Summarised composition of Georges River Council residential MUDs comingled recycling



1.6.3.3 Garden organics composition

A summary of the composition of Georges River Council’s residential garden organics is provided in Figure 18, along with the average composition of comingled recycling across SSROC councils. A summary of the composition of Council’s residential garden organics is provided in the Figures below for the whole LGA (Figure 19), SUDs only (Figure 20), and MUDs only (Figure 21). Vegetation made up over 92% of garden organics bins in both SUDs and MUDs. Contamination in SUDs was less than 1% and approximately 8% in MUDs.

As outlined in Section 1.6.3.1 above there is significant potential to include food organics in the current garden organic service to increase resource recovery. However, the key concern with introducing a FOGO service is that the introduction of food organics is likely to increase the contamination rate of the garden organics bin which is minimal (0.7%).

Figure 18: Garden organics composition Georges River Council compared to SSROC 2019

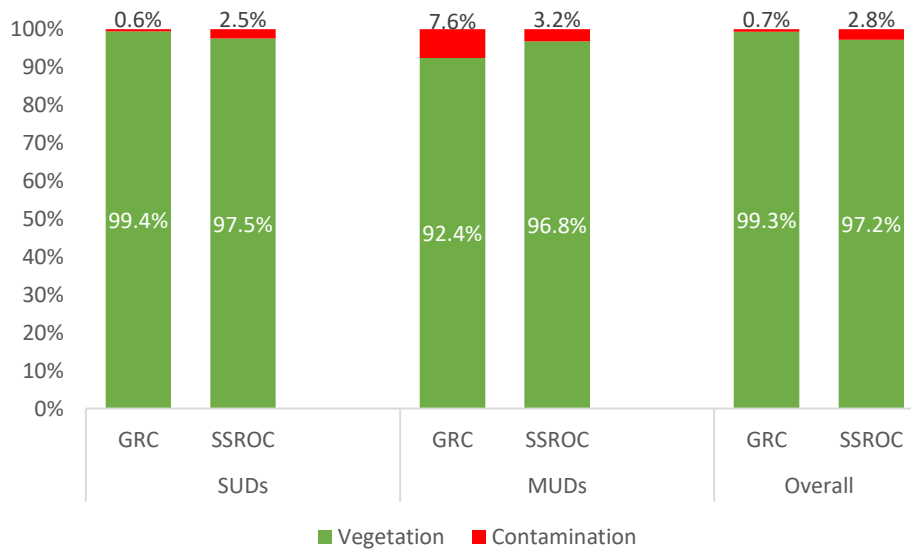


Figure 19: Summarised composition of Georges River Council residential garden organics (both SUDs and MUDs)

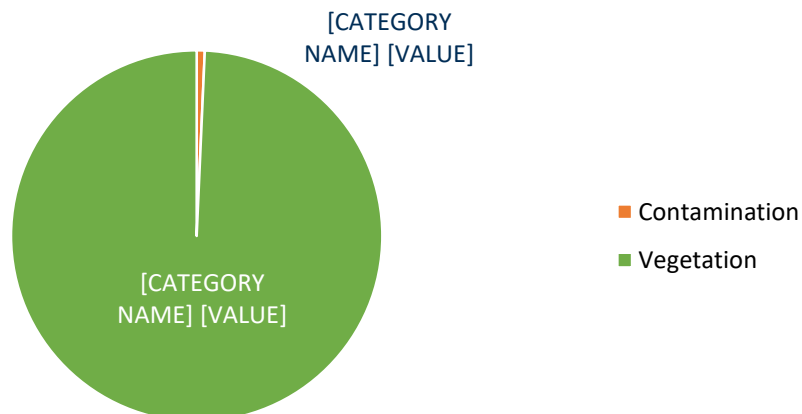


Figure 20: Summarised composition of Georges River Council residential SUDs garden organics

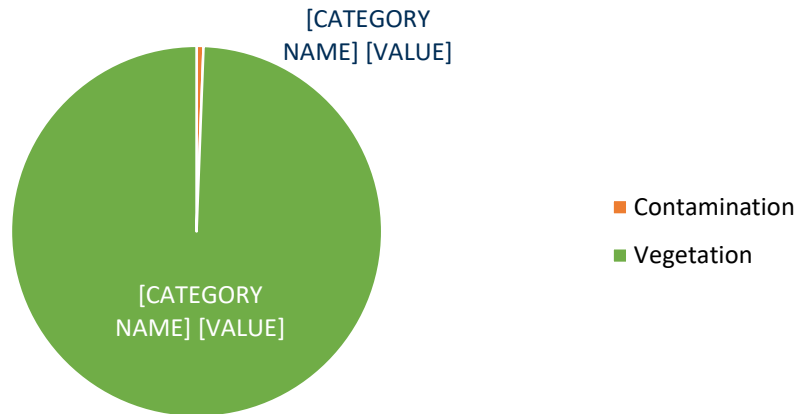
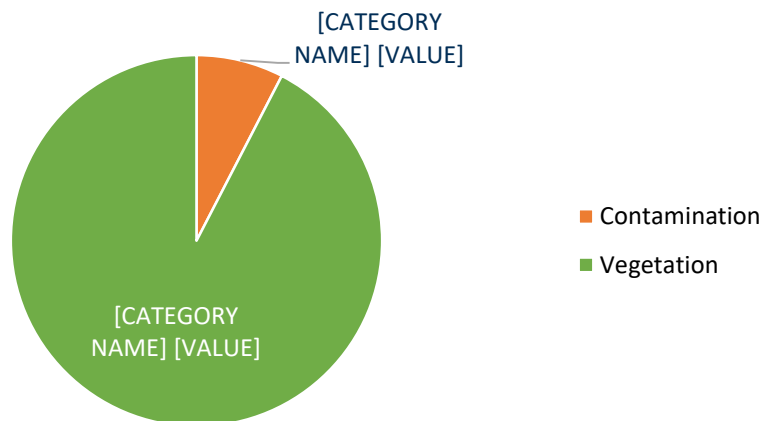


Figure 21: Summarised composition of Georges River Council residential MUDs garden organics



1.6.3.4 CDS eligible containers

The 2019 kerbside audit quantified the number of CDS eligible containers in the general waste and comingled recycling streams. A summary of the number of CDS eligible containers in both streams across Georges River Council household types is provided in Table 6. Georges River Council currently shares in the revenue from CDS containers captured through comingled recycling collections, sharing 50:50 with the current processing contractor, Suez.

As noted in Section 1.2.2.7, Suez uses the weighing method to claim refunds for eligible containers. Therefore, whilst CDS audits can provide an indication of the change of CDS eligible containers placed in the recycling bin or general waste bin it doesn't directly relate to the expected CDS refund for Georges River Council. Any eligible CDS containers which are deposited in the garbage bin do not receive any CDS refund.

Table 6: Average number of CDS material disposed through Georges River Council comingled recycling and general waste collections

Stream	SUDs (hhld/wk)	MUDs (hhld/wk)	Overall (hhld/wk)
Comingled recycling	2.9	0.9	2.2
General waste	2.1	1.0	1.7
Total	5	1.9	3.9

1.6.4 Waste generation and recycling performance

Based on the available data, Georges River Council’s recycling rate for residential waste is slightly below the average level for the Metropolitan Levy Area in NSW (Table 7).

Table 7: Georges River Council waste and recycling performance

Key performance indicator	Georges River Council performance	Comparable average	Performance	Comments
Recycling rate	41% (FY19)	41% (MLA FY17; NSW EPA, 2019)	Average	Georges River Council residents are recycling the same material for every tonne of waste generated, compared to its peers in the Metropolitan Levy Area of NSW.
Yield of waste and recycling (per capita, per year)	0.38 tonnes (FY19)	0.51 tonnes (MLA FY17; NSW EPA, 2019)	Above average	Georges River Council is generating less waste and recycling compared to its peers in the Metropolitan Levy Area of NSW. This suggests that Council is performing at an above average level in limiting waste generation, or that some residents may be disposing of wastes by other means.

1.7 Current and planned waste and recycling infrastructure

Georges River Council waste infrastructure

There is no other current or planned waste or recycling infrastructure owned or operated by Georges River Council. Council recommends residents take unwanted non-recyclable waste streams (which cannot be collected during Council’s free kerbside clean-up service, donated to a charity or sold on Ebay/Gumtree) to nearby waste management facilities such as the Suez Rockdale Resource Recovery Park or the Suez Lucas Heights Resource Recovery Park for recycling and/or disposal.

There is an opportunity for a Community Recycling Centre (CRC) to be developed in Georges River Council in the near future. Hurstville Council (prior to the amalgamation) had successfully applied for NSW EPA funding to establish a CRC. Problem wastes such as paint, gas bottles, batteries, motor oils and fluorescent tubes can be disposed of in household quantities (20L or 20 kg) at the CRC, improving local council recycling rates and reducing the illegal dumping and/or disposal of these hazardous waste streams. Over 80 CRC’s

currently operate in NSW, providing a free permanent drop-off centre for common household problem wastes that cannot be disposed via Georges River Council's kerbside bin or kerbside clean-up services.

Georges River Council currently spends approximately \$90,000 per year on the Household Chemical Cleanout events provided to residents for the disposal of waste streams currently received at CRC's. The establishment of a CRC would eliminate the need for the Household Cleanout events and the current Chemical Cleanout events expenditure could be used to operate the CRC.

Return and Earn machines

Georges River Council has one Return and Earn Reverse Vending Machine at Carss Bush Park, Carss Park. Two additional Return and Earn Reverse Vending Machines are planned for the local area.

Current kerbside and clean-up waste processing facilities

There are a number of commercial waste and recycling facilities within the Georges River Council area and surrounds that service the waste disposal and recycling needs of the region. These facilities are displayed in Appendix A and a description of what waste types each facility can accept is detailed in Appendix C.

Asbestos Waste

Asbestos waste is not allowed to be disposed in Georges River Council's kerbside bins or kerbside clean-up collection services. All asbestos waste can only be disposed of at an appropriately licenced facility. The NSW EPA has compiled a list of waste facilities which can accept household quantities of asbestos waste in the Sydney Metro region, which can be found at: <https://www.epa.nsw.gov.au/your-environment/household-building-and-renovation/dealing-with-household-asbestos/facilities-accept-household-asbestos>.

1.8 Programs, initiatives and community expectations

1.8.1 Education programs

Georges River Council delivers a range of education programs to improve waste management outcomes in the local area and are designed in accordance with the six pillars of Georges River Council's Community Strategic Plan (2018-2028). Georges River Council's waste education programs are based on the objectives and targets detailed in the NSW EPA Waste Avoidance and Resource Recovery Strategy 2014-2021, which include:

- Avoid and reduce waste generation;
- Increase recycling;
- Divert more waste from landfill;
- Manage problem wastes better;
- Reduce litter;
- Reduce illegal dumping.

The waste education programs in general are delivered to three key groups in the Georges River Council LGA; residents, businesses and schools. A selection of the current waste education programs includes:

Residents

- Bower Reuse and Repair Centre as supported by Georges River Council delivers workshops to assist participants to learn new skills to repair broken items such as small electrical goods, bicycles and timber furniture for reuse, preventing waste being sent to landfill.

- Composting and worm farming workshops are run by Georges River Council to provide residents with the knowledge to setup a worm farm or compost bin on their property to recycle their organic waste for reuse of their gardens. Georges River Council provides a 50% discount to residents for the purchase of compost bins, worm farms, and bokashi bins through a partnership with Compost Revolution.

Businesses

- Georges River Council has developed a Business Information Pack for local businesses which details the commercial waste service Council offers (waste types, collection frequencies, etc) and the responsibilities for business owners to maintain their waste management practices.
- Georges River Council is working with the Ethnic Communities Council of NSW (ECC) to deliver the NSW EPA Bin Trim program which provides a free audit and support to businesses to increase recycling and reducing waste sent to landfill. ECC is well suited to support Georges River Council's Culturally and Linguistically Diverse (CALD) businesses as it offers the program in Mandarin, Cantonese, Vietnamese, Arabic, Hindi, Tamil and Korean.

Schools

- Georges River Council is working with local schools to provide them with free recycling bins to educate children on what items can be recycled and increase recycling rates on school campuses.
- Georges River Council has partnered with Keep Australia Beautiful to provide the EnviroMentors Program to local schools. The EnviroMentors provide sustainability workshops for local schools to improve community awareness and engagement on local sustainability issues with input from Council.

The complete list of education programs delivered by Georges River Council is summarised in Appendix B.

1.8.2 Initiatives

Georges River Council staff work in conjunction with the Sydney RID squad to investigate, remediate and prosecute incidents of illegal dumping in the Council area.

Residents can report illegal dumping incidents to the NSW Environment Line for investigation by Georges River Council, the Sydney RID squad or the NSW EPA.

1.8.3 Community expectations

Direct community consultation is to be undertaken by Georges River Council in 2020 and 2021, the results of the consultation will be used to inform the waste services tendered for after 2021.

2 Where do we want to get to?

2.1 Vision and themes

To enable decisions to be made, regarding the direction of Council's efforts in waste management over the next 20 years, the strategy process involved developing an overall vision for Georges River Council's waste management system and translating this vision into a set of themes and strategic objectives.

The vision and themes of the Georges River Council Waste Strategy have been developed in accordance with the Georges River Local Strategic Planning Statement 2040 (LSPS) with a particular focus on linking with the vision of Theme 5: Environment and open space in 2040 of the LSPS as well as the following documents; SSROC Regional Waste Avoidance and Resource Recovery Strategy, Georges River Council Community Strategic Plan (2018-2028) the NSW Waste Avoidance and Resource Recovery Strategy 2014–21 and the key directions of the NSW 20-Year Waste Strategy (Discussion Paper).

The strategy's vision promotes a single, long-term goal for waste management in Georges River Council area in 2040. The themes describe the vision and what it would mean for four key areas of the waste management system; health, amenity and environment, access and use, costs and finances, governance and management.

Figure 22: Georges River Council waste strategy vision and themes



2.2 Strategic objectives

Table 8 presents a list of strategic objectives developed to translate each theme into specific measurable goals. The strategic objectives were then used to develop a set of options, comprised of tasks or action that Council could undertake over the next 20 years to achieve the objectives of this strategy.

Table 8: Georges River Council waste strategy - strategic objectives

Theme		1. Improve amenity and environmental management
Objectives		Description
1.1	Improve resource recovery and diversion of waste from landfill	Improve Council's resource recovery performance to 70% diversion of residential waste as outlined in the Georges River Local Strategic Planning Statement 2040.
1.2	Minimise environmental impact of waste management and disposal	Undertake actions to minimise environment impact of waste management and disposal.
Theme		2. Optimise waste management costs and foster adaptive waste management contracts
Objectives		Description
2.1	Unify services across LGA	Ensure there is a consistent service through a single contract for waste management services across the two historic LGAs.
2.2	Reduce waste management costs	Improve the efficiency of spending on waste management services, including regularly reviewing contracts and targeted recovery of economically viable waste stream.
2.3	Improve contract flexibility	Improve Council's waste management contracts to allow for transitions to new waste collection, recycling or disposal options as they come available.
Theme		3. Support and implement innovative waste management initiatives
Objectives		Description
3.1	Continue to develop joint procurement options for waste management services	Maintain strong relationships and engagement with key waste management industry stakeholders such as SSROC to allow for participation in joint procurement opportunities.
3.2	Improve waste management data	Improve collection and analysis of waste management data to allow Council to identify areas of concern for improvement.

3 How will we get there?

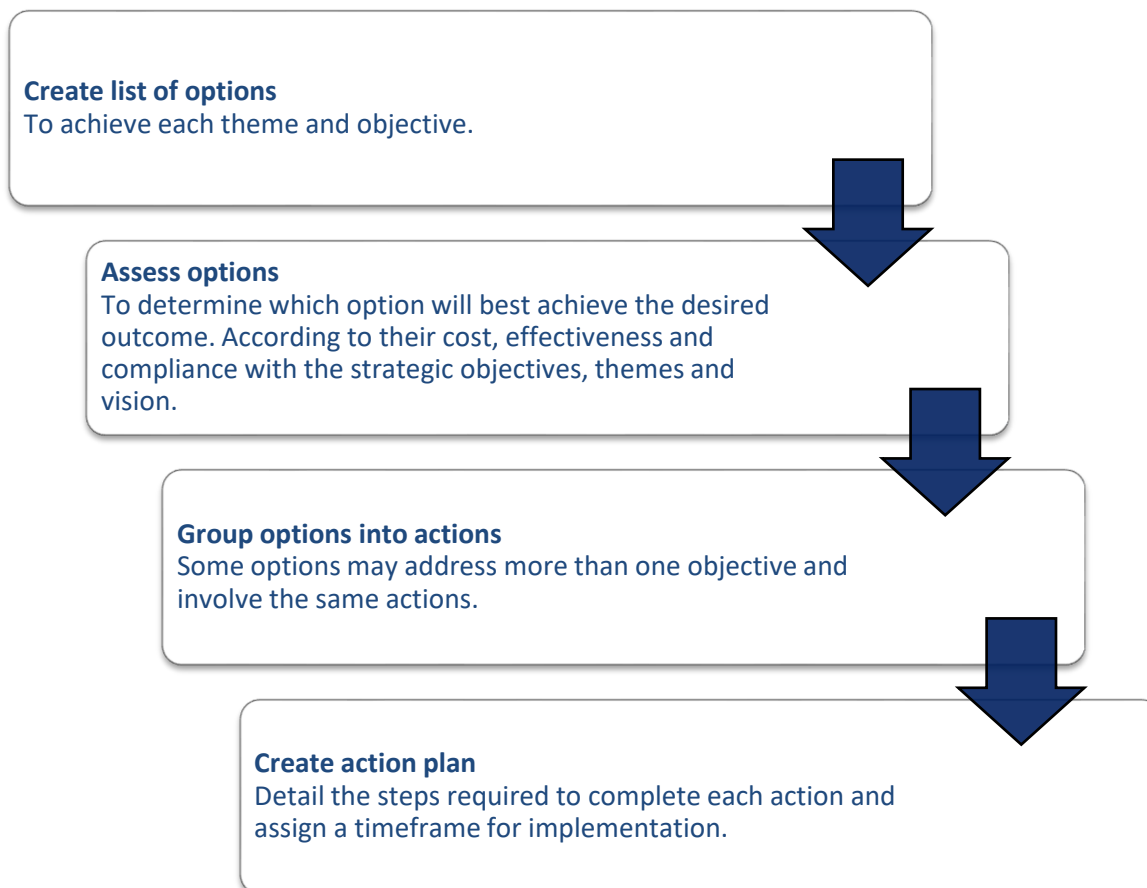
3.1 Steps to develop action plan

A plan of action to achieve the strategy's vision, themes and objectives was developed by MRA. To do so, a number of options were identified to achieve the strategic objectives of the waste strategy.

The options were then assessed against their alignment with the strategy's vision, themes and strategic objectives. This allowed for the consideration of possible actions, and the selection of the best actions for achieving each strategic objective and the strategy's overall vision.

The actions were then broken into their various stages to present a plan for the staged implementation of these actions over the next four years. The full procedure for developing the action plan is summarised in Figure 23.

Figure 23: Procedure applied to assess options and develop action plan



The following Sections present the information and results from the process outlined above.

3.2 Summary of options considered

A list of options to address each of the three strategic objectives was prepared by MRA and is presented in Table 9.

Table 9: List of ranked potential options for achieving the strategy's themes and objectives

Theme		1. Improve amenity and environmental management
Objectives		Potential Options
1.1	Improve resource recovery and diversion of waste from landfill (towards 70%)	<ol style="list-style-type: none"> 1. Trial FOGO collection for a select number of SUDs in conjunction with a strong education campaign for residents. 2. If FOGO trial is successful expand the service to all SUDs across the LGA and release an expression of interest to allow MUDs and businesses to opt-in to the service. 3. Consider processing general waste through an EfW facility if one becomes available to service Georges River Council. 4. Develop and deliver an education campaign to remove recyclables from the general waste bin (approximately 11% of the general waste bin is recyclable materials). 5. Support Georges River Council or joint SSROC procurement of local recycled content for large capital works such as recycle (glass sand and soft plastic) in road infrastructure.
1.2	Minimise environmental impact of waste management and disposal	<ol style="list-style-type: none"> 1. Finalise and publish the waste management conditions in the Georges River Council Development Control Plan. 2. Develop an education campaign in conjunction with the recycling collections and processing contractors to reduce contamination in the recycling bin (average contamination rate of 32.6%), with a focus on culturally and linguistically diverse communities and MUDs. Adopt Australian Council of Recycling (ACOR) Project Yellow to prioritise collected materials. 3. Commence community consultation to understand their expectations for waste management services. 4. Investigate the potential to establish a Georges River Council Community Recycling Centre or other options such as regular drop off events and smaller permanent drop off options to minimise illegal dumping and improve recycling of hazardous waste. 5. Continue current community and residential education programs with a key focus on reducing contamination in the recycling and garden organics bins. 6. Develop a contamination management procedure with the recycling collections and processing contractors to reduce contamination in the recycling bin (average contamination rate of 32.6%) and FOGO trial through the use of enforcement policies such as the 3-strike rule with a

Theme		1. Improve amenity and environmental management
Objectives		Potential Options
		<p>focus on MUDs. Establish contamination targets of 10% and 1% for recycling and organics bins, respectively.</p> <p>7. Conduct a review to determine if the existing Georges River Council resources to combat illegal dumping are sufficient to meet the desired targets for the local environment detailed in the Community Strategic Plan including an assessment of the value for money of Council's partnership with the local Regional Illegal Dumping (RID) squad.</p> <p>8. Assess Council's litter management infrastructure to prevent the occurrence of litter items and to capture them before entering the environment including a review to determine optimal placement and sufficient capacity of public place litter bins and gross pollutant traps.</p> <p>9. Document and report the climate change benefits associated with capturing the embodied energy of recyclables and of diverting organics from landfill.</p> <p>10. Develop an asbestos management plan with the EPA and SSROC.</p>

Theme		2. Optimise waste management costs and foster adaptive waste management contracts
Objectives		Potential Options
2.1	Unify services across LGA	<p>1. Tender for waste management services collectively as Georges River Council as various former Kogarah and former Hurstville Council contract expire. Utilise existing model contracts with contamination penalties incorporated into the contract obligations and include minimum education and engagement funding.</p> <p>2. Develop benchmarks between Councils in the region for:</p> <ol style="list-style-type: none"> Kerbside recycling and organics contamination Recyclables and organics capture rates (from the red bin) Litter index based on standardised litter audits <p>3. Develop a regional Commercial Food collection contract and develop local policies to maximise commercial food diversion from landfill.</p> <p>4. Undertake a bin assessment on quality, standard and lid colour.</p>
2.2	Reduce waste management costs	<p>1. Conduct competitive tender process (potential joint procurement) for upcoming collection and processing contracts and review Council's domestic and commercial waste charges on an annual basis.</p> <p>2. Utilise NSW Government and Commonwealth grant funding.</p> <p>3. Investigate FOGO service for all SUDs and opt in for MUDs and businesses, based on trial FOGO rollout outcome and community</p>

Theme		2. Optimise waste management costs and foster adaptive waste management contracts
Objectives		Potential Options
		<p>engagement.</p> <ol style="list-style-type: none"> 4. Investigate user pay principles (weight based billing) for residential and commercial waste collections to incentivise waste minimisation such as reducing kerbside bin sizes (e.g. general waste bin reduction from 120L to 80L bin). 5. Consider the use of Radio-Frequency Identification (RFID) bin tags for the trial of user pay services for commercial waste collections. 6. Undertake a “Bin Reconciliation Study” to compare the Council Rates Database to existing bin collection services to ensure that property rates accurately reflect the services being provided. 7. In line with the State Government policy, require new development Waste Management Plans to be developed by qualified and independent specialist consultants. 8. Facilitate Bin Trim campaigns to assist small business recycling.
2.3	Improve contract flexibility	<ol style="list-style-type: none"> 1. Future general waste bin processing/disposal contracts should be short term to allow Council to transition alternate processing/disposal options that provide better environmental and/or financial outcomes.

Theme		3. Support and implement innovative waste management initiatives
Objectives		Potential Options
3.1	Continue to develop joint procurement options for waste management services	<ol style="list-style-type: none"> 1. Maintain relationships and regularly engage with SSROC member councils and other potential local council partners to enter into joint procurement contracts for waste management services. 2. Continue to undertake detailed bin audits (procured through SSROC) on a 2-4 year cycle and include CDS eligible containers in the scope. 3. Develop a regional policy and review collective procurement arrangements with partners (SSROC), for alternative waste technologies and EfW. 4. Require source separation and recycling of priority products (such as wood, organics, metal and furniture) in regional collection contracts for household cleanup waste. 5. Develop a regional Sustainable Procurement Policy with partners (SSROC) which requires minimum percentage recycled content in construction contracts, preferentially purchases local content (compost etc) and imbeds recycled content (e.g. glass) into road building contracts.

Theme		3. Support and implement innovative waste management initiatives	
Objectives		Potential Options	
3.2	Improve waste management data	<ol style="list-style-type: none"> 1. Improve collection and analysis of waste management data to assess waste diversion, cost and performance metrics in real-time for each contract, waste type and Georges River Council overall. 2. Include waste management data reporting clauses in all future contracts as Key Performance Indicator (KPI) with deadlines for reporting to ensure Georges River Council has the required data within an appropriate timeframe. 3. Continue to undertake detailed bin audits to capture data to inform future actions and monitor outcomes of currently implemented actions. 4. Consider the use of RFID bin tags to improve waste management data capture for residential and commercial kerbside waste management services. 	

3.3 Options assessment

Each of the options identified in Section 3.2 above were then assessed to determine which options should be actioned upon to improve Georges River Council’s waste management outcomes over the next four years in accordance with the strategy’ vision, themes and strategic objectives.

The results from the options assessment are presented in Table 10 to provide the reader with the assessed benefits, disadvantages and risks as well as the overall score for the options alignment with the waste strategy’s vision, themes and strategic objectives, expected cost, ability to divert waste from landfill, meet community expectations and ease of implementation (low, medium or high) for each of the identified options.

Table 10: Options Assessment

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
1.1 - Improve resource recovery and diversion of waste from landfill (towards 70%)	1. Trial FOGO collection for a select number of SUDs in conjunction with a strong education campaign for residents.	Benefits: <ul style="list-style-type: none"> • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Reduced carbon emissions from landfill (key goal of Community Strategic Plan 2018-2028) • Meet community expectations • Cost savings if community participation is high • Trial period will be used to gauge community participation rate Disadvantages & Risks: <ul style="list-style-type: none"> • Administrative effort and costs associated with the implementation of trial • Product contamination risk if trial education campaign are not successful • Low food waste capture rate if trial area participation rate is low 	High
	2. If FOGO trial is successful expand the service to all SUDs across the LGA and release an expression of interest to allow MUDs and	Benefits: <ul style="list-style-type: none"> • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Reduced carbon emissions from landfill (key goal of Community Strategic 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	businesses to opt in to the service.	Plan 2018-2028) <ul style="list-style-type: none"> Meet community expectations Cost savings if community participation is high Trial period will be used to gauge community participation rate Disadvantages & Risks: <ul style="list-style-type: none"> Administrative effort and costs associated with the implementation of service Product contamination risk if education campaigns are not successful Low food waste capture rate if community participation rate is low 	
	3. Consider processing general waste through an energy from waste (EfW) facility if one becomes available to service Georges River Council.	Benefits: <ul style="list-style-type: none"> Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Reduced carbon emissions from landfill (key goal of Community Strategic Plan 2018-2028) Disadvantages & Risks: <ul style="list-style-type: none"> No available sites currently available Unknown gate fee and processing costs Incineration technologies are negatively viewed by the community based on experiences with older incineration technology 	Medium
	4. Develop and deliver an education campaign to remove recyclables from the general waste bin (approximately 11% of the general waste bin is	Benefits: <ul style="list-style-type: none"> Increased resource recovery, up to 11% - significant increase to Council resource recovery (key goal of Local Strategic Planning Statement 2040) Cost savings by reducing volume of recyclables going to landfill or AWT Increased community awareness and participation 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	recyclable materials).	Disadvantages & Risks: <ul style="list-style-type: none"> Administrative effort and costs (consultancy fees) associated with the development and delivery of education plan Georges River Council is a very diverse community so any education materials will need to be delivered in multiple languages 	
	5. Support Georges River Council or joint SSROC procurement of local recycled content for large capital works such as recycle (glass sand and soft plastic) in road infrastructure.	Benefits: <ul style="list-style-type: none"> Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Often cheaper than virgin materials Allows for transition to circular economy Disadvantages & Risks: <ul style="list-style-type: none"> Contractors and Council engineers are often reluctant to use recycled content over virgin materials 	Medium
1.2 - Minimise environmental impact of waste management and disposal	1. Finalise and publish the waste management conditions in the Georges River Council Development Control Plan.	Benefits: <ul style="list-style-type: none"> Standardise the waste management requirements for all new developments across the LGA Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Reduce administrative costs in assessing waste management plans Disadvantages & Risks: <ul style="list-style-type: none"> Administrative effort and costs associated with the drafting process 	High
	2. Develop and deliver an education campaign in conjunction with the recycling collections and processing contract to	Benefits: <ul style="list-style-type: none"> Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Cost savings by reducing volume of recyclables going to landfill or AWT 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	<p>reduce contamination in the recycling bin (average contamination rate of 32.6%), with a focus on culturally and linguistically diverse communities and MUDs. Adopt ACOR Project Yellow to prioritise collected materials.</p>	<ul style="list-style-type: none"> Increased community awareness and participation Improved engagement and communication between Council and recycling contractors <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Administrative effort and costs (consultancy fees) associated with the development and delivery of education plan Georges River Council is very diverse community so any education materials may need to be delivered in multiple languages 	
	<p>3. Commence community consultation to understand their expectations for waste management services.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Gain an understanding of the community expectations and willingness to pay for the upcoming waste management services Engagement with the community now will likely relate to increased engagement with future programs and services <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Administrative effort and costs associated with the implementation of community consultation 	High
	<p>4. Investigate the potential to establish a Georges River Council Community Recycling Centre or other options such as regular drop off events and smaller permanent drop off options to minimise illegal dumping and improve recycling of hazardous waste.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Centralise costs for e-waste, Chemical Cleanout events and disposal of other waste streams in particular hazardous waste streams Minimise illegal dumping by making it easier to dispose of household cleanup and hazardous waste streams NSW Government funding is available to provide financial assistance to establish Community Recycling Centres and other similar options <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Suitable site needs to be identified and purchased by Council, if suitable land is not currently owned by Council 	Medium

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
		<ul style="list-style-type: none"> One off planning approval cost and ongoing operating costs for permanent options (e.g. CRC) 	
	<p>5. Continue current community and residential education programs with a key focus on reducing contamination in the recycling and garden organics bins.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Decrease waste generation Promote circular economy Reduce contamination rates Engagement with community on importance of correct waste management <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Administrative effort and costs associated with the implementation of community education programs 	<p>Medium</p>
	<p>6. Develop a contamination management procedure with the recycling collections and processing contractors to reduce contamination in the recycling bin (average contamination rate of 32.6%) and FOGO trial through the use of enforcement policies such as the 3-strike rule with a focus on MUDs. Establish contamination Targets of 10% and 1% for recycling</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Formalises Council’s response (3 strike bin inspection policy) to remove heavily contaminated bins from the collection route Increased resource recovery (key goal of Local Strategic Planning Statement 2040) through reduction of recycling being landfilled due to other contamination e.g. soiled paper and cardboard. Reduce expensive contamination fees from the processing contractors (recycling and organics) <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Administrative effort and costs associated with the inspections of bin and removal of heavily contaminated bins from the collection route 	<p>High</p>

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	and organics bins, respectively.		
	<p>7. Conduct a review to determine if the existing Georges River Council resources to combat illegal dumping are sufficient to meet the desired targets for the local environment detailed in the Community Strategic Plan including an assessment of the value for money of Council’s partnership with the local Regional Illegal Dumping (RID) squad.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Improve the health rating of the Georges River by preventing illegal dumping (target of Community Strategic Plan) • Improve resident satisfaction with the quality of open spaces by reducing illegal dumping (target of Community Strategic Plan) • NSW Government funding is available for programs to improve illegal dumping management – Combating Illegal Dumping: Clean-up and Prevention Program • Improved illegal dumping outcomes for Council <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Administrative effort and costs (potentially consultancy fees) associated with the review of Council’s illegal dumping resources and the value for money of the involvement with the local RID squad. 	High
	<p>8. Assess Council’s litter management infrastructure to prevent the occurrence of litter items and to capture them before entering the environment including a review to determine optimal placement and sufficient capacity of public place litter bins and gross pollutant traps.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Improve the health rating of the Georges River by preventing litter (target of Community Strategic Plan) • Improve resident satisfaction with the quality of open spaces by reducing litter (target of Community Strategic Plan) • NSW Government funding is available for programs to improve litter management – Community Litter Grants <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Administrative effort and costs (potentially consultancy fees) associated with the review of Council’s illegal dumping resources and the value for money of the involvement with the local RID squad. 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	<p>9. Document and report the climate change benefits associated with capturing the embodied energy of recyclables and of diverting organics from landfill</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Increases community understanding of the benefits of recycling • Provides evidence to Council of the priority ranking of recycling and diversion of organics from landfill, in terms of climate change mitigation actions. • Simple and cheap to implement. <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	High
	<p>10. Develop an asbestos management plan with the EPA and SSROC</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Reduces improper handling of asbestos • Increases community understanding asbestos • SSROC previously developed and implemented such a pilot plan <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	Medium
<p>2.1 - Unify services across LGA</p>	<p>1. Tender for waste management services collectively as Georges River Council as various former Kogarah and former Hurstville Council contract expire. Utilise existing model contracts with contamination penalties incorporated into the contract obligations and include minimum education</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Allows for consistent messaging for the whole of Council area • Cost savings due larger scale of services required <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	and engagement funding.		
	<p>2. Develop benchmarks between Councils in the region for kerbside and organics contamination, recyclables and organics capture rates and litter based on standardised litter audits</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Establishes best practice • Provides incentives to improve • Allow for faster comparison of recovery rates and therefore programs each Council has implemented than waiting for NSW EPA to release Local Government Data reports <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	Medium
	<p>3. Develop a regional Commercial Food collection contract and develop local policies to maximise commercial food diversion from landfill</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Reduces greenhouse gas emissions (key goal of Community Strategic Plan 2018-2028) • Achieves State policy objectives • Consistent with best practice in Europe <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Will require food waste generation premises to add an extra bin to recover food waste 	High
	<p>4. Undertake a bin assessment on quality, standard and lid colour.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Ensures common practice between households and businesses • Ensures education messages are consistent <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	Medium

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score	
2.2 – Reduce waste management costs	<p>1. Conduct competitive tender process (potential joint procurement) for upcoming collection and processing contracts and review Council’s domestic and commercial waste charges on an annual basis.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Reduced waste management costs • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Reduced tendering process costs (if through joint procurement) • Joint procurement allows for significant investment by private sector in new or improved resource recovery technologies and facilities <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Administrative effort and costs associated with the tendering process • Joint procurement partners may have different key outcomes for contracts e.g. focus of increased recovery or focus on reducing waste management costs 	High	
	<p>2. Utilise NSW Government and Commonwealth grant funding.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Provides financial support to for a range of waste management programs and infrastructure to divert waste from landfill • Funding can be used to attract potential waste service providers or infrastructure operators <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Minor administrative or consulting costs to prepare grant applications 		High
	<p>3. Implement FOGO service for all SUDs and opt in for MUDs and businesses.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Reduce waste management costs • Increased resource recovery (key goal of Local Strategic Planning Statement 2040) • Reduced carbon emissions from landfill (key goal of Community Strategic Plan 2018-2028) 		High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
		<ul style="list-style-type: none"> Meets community expectations Disadvantages & Risks: <ul style="list-style-type: none"> High contamination and therefore financial penalties if community participation is poor 	
	<p>4. Investigate user pay principles for residential and commercial waste collections (including additional household cleanup material collections) to incentivise waste minimisation</p>	Benefits: <ul style="list-style-type: none"> Rewards residents who increase waste minimisation Residents who require additional services pay extra charges Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Improve efficiency of collection vehicles Disadvantages & Risks: <ul style="list-style-type: none"> Administrative costs to develop and manage the user pay schedules for residential kerbside services Potential for residents to reduce bin size to save money but have overflowing bins leading to wind blown litter 	High
	<p>5. Consider the use of Radio-Frequency Identification (RFID) bin tags for the trial of user pay services for commercial waste collections.</p>	Benefits: <ul style="list-style-type: none"> Allows for accurate billing and measurement of commercial services provided to local businesses by Council Potentially improves competitiveness of Council’s commercial waste management services Disadvantages & Risks: <ul style="list-style-type: none"> Administrative and contractor costs to install the RFID tags establish the waste management database to store and analyse the relevant data 	Medium
	<p>6. Undertake a Bin Reconciliation Study to</p>	Benefits: <ul style="list-style-type: none"> Ensures Council is charging for the services it provides 	Medium

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	compare the Council Rates Database to bin collection services.	<ul style="list-style-type: none"> Ensures there are no free riders in the system Captures the SUD sites that have been redeveloped into MUDS Captures households with illegal bins <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> No disadvantages or risks were identified 	
	7. Require Waste Management Plans to be developed by qualified and independent specialists (in line with State Policy).	<p>Benefits:</p> <ul style="list-style-type: none"> Puts the onus for good planning with the developers Ensures Council waste staff time is properly allocated Is consistent with State Policy to require developers to plan for waste using independent waste experts. <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> No disadvantages or risks were identified 	Medium
	8. Facilitate Bin Trim campaigns to assist small business recycling	<p>Benefits:</p> <ul style="list-style-type: none"> Provides low cost education on recycling for businesses Establishes best practice for small business <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> No disadvantages or risks were identified 	Medium
2.3 – Improve contract flexibility	1. Draft flexible contracts for future general waste and recycling bins for processing/disposal to allow Council to transition alternate processing/disposal options such as EfW.	<p>Benefits:</p> <ul style="list-style-type: none"> Allows Georges River Council to transition to emerging and improved resource recovery technologies and facilities such as EfW which will provide cost savings and/or improved resource recovery outcomes Reduces the impact of changes in the market (regulatory/commodity) due to short term nature of contract <p>Disadvantages & Risks:</p>	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
		<ul style="list-style-type: none"> Potentially higher per tonne waste management costs due shorter contract length 	
3.1 - Continue to develop joint procurement options for waste management services	1. Maintain relationships and regularly engage with SSROC member councils and other potential local council partners to enter into joint procurement contracts for waste management services.	Benefits: <ul style="list-style-type: none"> Increased resource recovery (key goal of Local Strategic Planning Statement 2040) Reduced waste management costs Reduced tendering process costs (if through joint procurement) Joint procurement allows for significant investment by private sector in new or improved resource recovery technologies and facilities Disadvantages & Risks: <ul style="list-style-type: none"> SSROC membership fees Procurement timeframes may be longer for joint procurement services as all members need to agree 	High
	2. Continue to undertake detailed bin audits (procured through SSROC) on a 2-4 year cycle and include CDS eligible containers in the scope.	Benefits: <ul style="list-style-type: none"> Obtain detailed bin audit data to inform future actions and services as well as assessing the success of current programs Reduced consulting costs through joint procurement Disadvantages & Risks: <ul style="list-style-type: none"> Consulting costs for independent auditors 	Medium
	3. Develop a regional policy and review collective procurement arrangements with partners (SSROC) for alternative waste technologies (AD, pyrolysis)	Benefits: <ul style="list-style-type: none"> Establishes best practice technology in the region Ensures the region is considering landfill alternatives Establishes procurement models Disadvantages & Risks:	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
	etc) and Energy from Waste.	<ul style="list-style-type: none"> • Staff time to develop policies • Research costs to develop technology reviews 	
	<p>4. Require source separation and recycling of priority products (such as wood, organics, metal and furniture) in regional collection contracts for household cleanup waste.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Establishes best practice • Provides for maximum recycling of household cleanup waste <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • Costs of household cleanup waste services will increase marginally due to additional labour costs 	Medium
	<p>5. Develop a regional Sustainable Procurement Policy with partners (SSROC) which requires minimum percentage recycled content in construction contracts, preferentially purchases local content (compost etc) and imbeds recycled content (e.g. glass) into road building contracts.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Ensures a circular economy for recycled products • Ensures sustainable markets for commodities <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> • No disadvantages or risks were identified 	High
3.2 – Improve waste management data	<p>1. Improve collection and analysis of waste management data to assess waste diversion, cost and performance metrics in real-time for each contract, waste type and Georges River Council overall.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> • Improved waste management data will allow Georges River Council to assess waste diversion, cost and performance metrics in real-time for each contract, waste type and Georges River Council overall. • The specific reporting requirements in the new contracts will reduce the administration and management time required to capture and present the key information out of the current reports and invoices provided by 	High

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
		<p>contractors.</p> <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Administrative effort and costs associated with developing waste management information database 	
	<p>2. Include waste management data reporting clauses (KPI) in all future contracts with deadlines for reporting to ensure Georges River Council has the required data within an appropriate timeframe.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Reduces administration time identifying and recording the relevant data from waste service provider reporting and invoices Financial penalties for service providers if reporting deadline are not met to ensure timely delivery of reporting <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> No disadvantages and risks were identified 	High
	<p>3. Continue to undertake detailed bin audits to capture data to inform future actions and monitor outcomes of currently implemented actions.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Allows for future services and programs to be tailored based on the audit Allows for the assessment of current services and programs Competitive consulting costs are achieved through joint procurement of the audits through SSROC <p>Disadvantages & Risks:</p> <ul style="list-style-type: none"> Consulting costs for independent auditors 	Medium
	<p>4. Consider the use of RFID bin tags to improve waste management data capture for residential and commercial kerbside waste management services.</p>	<p>Benefits:</p> <ul style="list-style-type: none"> Improve quality and reliability of waste management data Allow for Council to identify any concerns or areas for improvement in real time Allow for a simplified billing process using bin lift or weight based charging mechanisms 	Medium

Strategic Objective	Option	Benefits, Disadvantages and Risks	Score
		Disadvantages & Risks: <ul style="list-style-type: none"> <li data-bbox="875 293 1783 357">• Administrative or consulting costs to assess the cost-benefit of installing RFID bin tags 	

3.4 Final list of actions

Table 11 presents the final list of actions selected (assessed as high in the options assessment above) for the next four years of the waste strategy (2021 to 2025). Options common to more than one general outcome are grouped under the one action, while multiple actions for one objective are listed separately as discrete actions.

Table 11: List of actions selected for the Georges River Council Waste Strategy (2021-2040)

Action	Options captured	Objectives satisfied
1. Trial the rollout of FOGO services to a select number of SUDs and if successful then implement FOGO collections for all SUD and opt in service for MUDs and businesses.	1.1.1, 1.1.2 and 2.2.3	1.1 - Improve resource recovery and diversion waste from landfill 2.2 - Reduce waste management costs
2. Develop and implement an education campaign to move recyclables from the general waste bin into the recycling bin and reduce contamination in the recycling bin. Continue existing community and residential education with a focus on reducing contamination in the recycling garden/FOGO bins. Education programs to have a focus of MUDs and culturally linguistically and diverse communities. Adopt ACOR Project Yellow to prioritise collected materials.	1.1.4, 1.2.2 and 1.2.5	1.1 – Improve resource recovery and diversion of waste from landfill 1.2 - Minimise environmental impact of waste management and disposal
3. Conduct competitive tender processes (potentially through joint procurement) for upcoming collection and processing contracts as combined former Hurstville and former Kogarah councils.	2.1.1, 2.2.1 and 3.1.1	2.1 - Unify services across LGA 2.2 – Reduce waste management costs 3.1 - Continue to develop joint procurement options for waste management services
4. Draft flexible contracts for future general waste and recycling bins for processing/disposal to allow Council to transition alternate processing/disposal options such as EfW.	1.1.3 and 2.3.1	1.1 - Improve resource recovery and diversion of waste from landfill 2.3 - Improve contract flexibility
5. Finalise and publish the waste management conditions in the Georges River Council Development Control Plan.	1.2.1	1.2 - Minimise environmental impact of waste management and disposal

Action	Options captured	Objectives satisfied
6. Develop new database to compile all relevant waste management contract information in one place and require all new waste management contracts to have specific reporting requirements to ensure the Waste Service Provider captures the necessary data and it is clearly presented.	3.2.1 and 3.2.2	3.2 - Improve waste management data
7. Continue to monitor and apply for NSW and Commonwealth government grants to provide financial assistance for programs that will improve waste management outcomes for Georges River Council.	2.2.2, 1.2.4, 1.2.7 and 1.2.8	1.2 – Minimise environmental impact of waste management and disposal 2.2 – Reduce waste management costs
8. Undertake direct community consultation to inform the waste services tendered for after 2021.	1.2.3	1.2 – Minimise environmental impact of waste management and disposal
9. Develop a contamination management procedure with the recycling collections and processing contractors to reduce contamination in the recycling bin (average contamination rate of 32.6%) and FOGO trial through the use of enforcement policies such as the 3-strike rule with a focus on MUDs.	1.2.6	1.2 – Minimise environmental impact of waste management and disposal
10. Conduct a review to determine if the existing Georges River Council resources to combat illegal dumping are sufficient to meet the desired targets for the local environment detailed in the Community Strategic Plan including an assessment of the value for money of Council’s partnership with the local RID squad.	1.2.7	1.2 – Minimise environmental impact of waste management and disposal 3.1 - Continue to develop joint procurement options for waste management services
11. Assess Council’s litter management infrastructure to prevent the occurrence of litter items and to capture them before entering the environment including a review to determine optimal placement and sufficient capacity of public place litter bins and gross pollutant traps.	1.2.8	1.2 – Minimise environmental impact of waste management and disposal
12. Investigate user pay principles for residential and commercial waste collections (including additional household cleanup material collections) to incentivise waste minimisation.	2.2.4	2.2 – Reduce waste management costs
13. Document and report the climate change benefits associated with capturing the embodied energy of recyclables and of diverting organics from landfill.	1.2.9	1.2 – Minimise environmental impact of waste management and disposal

Action	Options captured	Objectives satisfied
<p>14. Develop a regional Commercial Food collection contract and develop local policies to maximise commercial food diversion from landfill</p>	<p>2.1.3 and 1.1.2</p>	<p>1.1 - Improve resource recovery and diversion waste from landfill</p> <p>2.1 - Unify services across LGA</p>
<p>15. Develop a regional policy and review collective procurement arrangements for alternative waste technologies (AD, pyrolysis etc) and EfW.</p>	<p>3.1.3</p>	<p>3.1 - Continue to develop joint procurement options for waste management services</p>
<p>16. Develop a regional Sustainable Procurement Policy with partners (SSROC) which requires minimum percentage recycled content in construction contracts, preferentially purchases local content (compost etc) and imbeds recycled content (e.g. glass) into road building contracts.</p>	<p>3.1.5</p>	<p>3.1 - Continue to develop joint procurement options for waste management services</p>

4 How will the strategy be implemented?

4.1 Action plan

Table 12 presents the action plan for implementing Georges River Council’s waste management vision and strategic objectives over the next four year period (2021 to 2025). An indicative cost has been assigned and whether there are NSW Governments grants available for each action.

Table 12: Action plan for Georges River Council Waste Strategy

Georges River Council Waste Strategy (2021-2025)				Version/Date: 8 February 2021	
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
September 2019	5	Finalise and publish the draft waste management conditions for the Georges River Development Control Plan	<ul style="list-style-type: none"> Georges River Council executive and councillors to approve waste management conditions for the Georges River Development Control Plan for publication. 	Consultant costs for this work have been paid for and in-kind work already assigned to relevant teams.	Not applicable as the work has already begun
Ongoing	7	Continue to monitor and apply for NSW and Commonwealth government grants to improve waste management outcomes for Georges River Council	<ul style="list-style-type: none"> Monitor and apply for relevant grant funding especially from the NSW EPA Waste Less Recycle More funding and Commonwealth funding available to support the establishment of recycling infrastructure for upcoming export bans in particular the following grants: <ul style="list-style-type: none"> Combating Illegal Dumping: Clean-up and Prevention Program Community Litter Grants Community Recycling Centre Program AWT Transition Package Organics Infrastructure Fund 	Grant applications to be prepared using in-kind resources or through a consultancy (\$5,000 to \$15,000 per grant application). Registration for Emissions Reduction Fund by in-kind resources or through a consultancy ~\$2,500.	Yes – see information in “Details” column

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			<ul style="list-style-type: none"> Register for the Emissions Reduction Fund for any projects that divert organics from landfill such as the provision of a FOGO service for residential and businesses. 		
July 2021	13	Document and report the climate change benefits associated with capturing the embodied energy of recyclables and of diverting organics from landfill.	<ul style="list-style-type: none"> Undertake an assessment of the climate change benefits associated with capturing the embodied energy of recyclables and diverting organics from landfill at the end of each financial year, to determine the diversion of CO2 equivalent emissions. 	Assessment of climate change benefits from Councils' recycling activities could be completed by consultants for ~ \$5,000 for recyclables assessment and \$5,000 for organics assessment.	Not Applicable
July 2021	6	Develop new database to compile all relevant waste management contract information	<ul style="list-style-type: none"> Review the current waste management contracts and relevant information to determine baseline data for all waste streams especially Container Deposit Scheme and specialist waste management services e.g. mattress recycling. 	Database improvements could be completed by in-kind resources.	Not Applicable
September 2021	8	Undertake direct community consultation to inform the waste services tendered for after 2022	<ul style="list-style-type: none"> Prepare the questionnaire to gauge the community's expectations and requirements for future waste management services as well as their willingness to engage and pay for services such as FOGO. The consultation is expected to be undertaken from late 2021 to early 2022, 	Community Consultation could be completed by in-kind resources.	Not Applicable

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			the results of the consultation will be used to inform the waste services tendered for after 2021.		
October 2021	9	Develop a contamination management procedure	<ul style="list-style-type: none"> Undertake an internal workshop to identify, assess and formalise the potential contamination management measures such as the 3-strike policy, bin inspection procedures and bin stickering. Publish the contamination management procedures with a fact sheet for residents on how it impacts them. 	Contamination management procedure to be developed by in-kind resources as well as input from the relevant contractors.	Not Applicable
October 2021	11	Assess Council's litter management infrastructure	<ul style="list-style-type: none"> Conduct a review of Council's litter management infrastructure to evaluate the optimal placement and determine the sufficient capacity of public place litter bins and gross pollutant traps. The review will provide a set of prioritised options to improve litter management in Georges River Council in particular litter with the potential to enter the Georges River. 	Council's litter management infrastructure assessment to be developed by in-kind resources as well as consultants for ~ \$10,000 to 20,000 if register of public place bins and gross pollutant traps is available.	Community Litter Grants depending on the scope of the assessment
Early 2022	1	Trial small scale FOGO service in SUDs	<ul style="list-style-type: none"> Prepare a FOGO implementation plan for the trial. Develop and deliver education material for the FOGO trial. Rollout FOGO trial early 2022. 	A FOGO trial of 2,000 households would cost approximately \$50,0000 excluding tipping costs (~\$150/tonne) and transport costs (dependant on FOGO	Organics Collections Grants can provide up to \$1.3m (up to 100% of

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
				processing facility location). Potential for funding from the Organics Collection Grants or Local Council Transition Fund.	project costs) for audits, education and infrastructure. Local Council Transition Fund provides up to \$180,000 for options assessment, tendering costs, education and staff salaries.
January 2022	10	Review Georges River Council's resources to combat illegal dumping and assess the value for money of Council's partnership with the local Regional Illegal Dumping (RID) squad	<ul style="list-style-type: none"> Review Georges River Council's resources to combat illegal dumping against the targets in the Community Strategic Plan 2018-2028. Assess if Council's involvement in the local RID squad provides value for money. 	Review of Council's resources to combat illegal dumping could be completed by in-kind staff and potentially supported by NSW EPA funding for additional resources or implementation of the findings of the internal review.	Combating Illegal Dumping: Clean-up and Prevention Program – up to \$120,000 for illegal dumping reduction projects (if baseline data available – up to \$20,000 to establish baseline.

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
January 2022	12	Investigate user pay principles for residential and commercial waste collections	<ul style="list-style-type: none"> Undertake a review of the potential for Council to introduce user pay principles such as weight based billing, fee decreases for reducing size of the bins and fees charged on a per pickup basis (commercial collections only and household cleanup materials). Undertake an analysis of the potential costs and benefits of introducing various user pay business models. 	Review of potential for Council to introduce weight based billing and undertake a cost-benefit analysis of various user pay business models could be completed by consultants for ~ \$25,000	Not Applicable.
July 2021	2	Develop and implement an education campaign to move recyclables from the general waste bin into the recycling bin and reduce contamination in the recycling bin	<ul style="list-style-type: none"> Develop education campaign and materials highlighting the need to place recyclable material in the recycling bin and reduce contamination in the recycling. Deliver education campaign in conjunction with existing education programs as listed in Section 1.8 and Appendix B. Participate in ACOR's Project Yellow. 	Education campaign to be developed and implemented through existing education resources and with the assistance of the relevant contractors	Not applicable, however, the education and communication funding provided by the rollout of a FOGO service (Action 1) could be leveraged for this education campaign.
September 2022	1	Assess outcomes of trial FOGO service	<ul style="list-style-type: none"> Conduct visual general waste FOGO bin audits for the trial area to measure participation and contamination rates. Review general waste and FOGO audit results from trial period to determine 	Undertaking of visual bin audits, review and reporting of audit results as well as the cost-benefit analysis of the trial could be completed by	Organics Collections Grants and Local Council Transition Fund

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			<p>participation and contamination rates.</p> <ul style="list-style-type: none"> Conduct a cost-benefit analysis for the roll-out of FOGO service based on trial participation and contamination rates. 	consultants for ~ (\$15,000 to \$20,000).	as detailed above on pages 55-56 for Action 1, FOGO trial.
May 2022	15	Develop a regional policy and review collective procurement arrangements for alternative waste technologies (AD, pyrolysis etc) and Energy from Waste.	<ul style="list-style-type: none"> Discuss a regional policy and review collective procurement arrangements for alternative waste technologies and Energy from Waste technologies with SSROC and the other interested local councils in the Greater Sydney region. If discussion lead to sufficient interest from SSROC members and other local councils in Greater Sydney, develop a policy to attract potential technology providers with a goal for treating all of Georges River Council's general waste in 2027 when former Kogarah's general waste processing contract expires. 	Discussion and development of a regional policy for collective procurement arrangements to be completed using in-kind resources and SSROC resources.	Not Applicable.
June 2022	14	Develop a regional Commercial Food collection contract and develop local policies to maximise commercial food diversion from landfill	<ul style="list-style-type: none"> Discuss with SSROC partners and local business the introduction of a Commercial Food collection contract. If discussions lead to the sufficient interest from SSROC partners and local businesses develop a regional commercial food collection contract, to be integrated with the Council FOGO 	Discussion and development of a regional policy for collective procurement arrangements to be completed using in-kind resources and SSROC resources.	Potentially Commercial Organics Collections Grant and Organics Infrastructure Fund depending on

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			service (if FOGO trial is successful).		the scope of the project
June 2022	6	Require all new waste management contracts to have specific reporting requirements	<ul style="list-style-type: none"> Ensure the information required for the waste management contracts database is detailed in any of the new waste contract reporting clauses. 	To be completed using in kind resources or will be undertaken by the consultant appointed to assist with tendering process.	Not Applicable.
July 2022	3	<p>Conduct competitive tender processes (potentially through joint procurement) for upcoming collection and processing contracts</p> <p>Conduct competitive tender processes (potentially through joint procurement) for upcoming collection and processing contracts (continued)</p>	<ul style="list-style-type: none"> Council has the following collection and processing contracts that expire in 2023 that need to be tendered for⁸: <ul style="list-style-type: none"> Collection contracts for all residential, commercial and public place bins; Processing of co-mingled recycling waste; Processing of garden organics (potentially FOGO); and Processing and/or disposal contract for general waste from former Hurstville Council. Review former Kogarah Council general waste processing contract to determine if food waste component can be source separated for FOGO service. Tender for the following services: 	<p>To develop contract specifications for the services detailed to be completed using in-kind resources in addition to consultancy costs ~ \$60,000 to \$70,000.</p> <p>If services are tendered through joint procurement, the tendering costs will be shared across the participants.</p>	Not Applicable.

⁸ See Section 1.5 for further details.

Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			<ul style="list-style-type: none"> ○ Collection contracts for all residential, commercial and public place bins; ○ Processing of co-mingled recycling waste; ○ Processing of FOGO (for whole of LGA if former Kogarah general waste processing contract is not restrictive); ○ Processing and/or disposal contract for general waste from former Hurstville; and ○ Discuss potential joint procurement opportunities for the above services with SSROC councils and other potential partner councils. ● A staged tender process in which collection services are procured last will ensure the selected processing and/or disposal facilities are known for the collection services tender. ● Tender returns will be analysed, including costs, with negotiation taking place with shortlisted tenderers to ensure a competitive price is achieved. ● The preparation of a tender and contract for processing/disposal services will begin in June 2022, with the tender released by November 2022, tender returns expected 		

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			<p>by February 2022 and the contract signed by May 2022 for a commencement in February 2023.⁹</p> <ul style="list-style-type: none"> The preparation of a tender and contract for collection services will begin in February 2023, with the tender released by May 2023, tender returns expected August 2023 and the contract signed by September 2023 for a commencement in February 2024. 		
July 2022	4	Draft flexible contracts for future general waste and recycling bins for processing/disposal to allow Council to transition alternate processing/disposal options such as EfW	<ul style="list-style-type: none"> To be considered during competitive tender process as described above. Processing and/or disposal contract for former Hurstville Council general waste to be no longer than 2027 (to align with expiration of former Kogarah Council general waste processing contract). Existing contracts with collector and processor are to be thoroughly reviewed and a list of changes for the new contracts prepared. Consider the inclusion of clauses in the co-mingled recycling processing contract for periodic (e.g. annual) reviews to be undertaken to monitor the agreement 	To be included in the above tendering assistance costs from the chosen consultant.	Not Applicable.

⁹ Note processing and/or disposal contract for former Kogarah general waste does not expire until 2027 and therefore is considered in this action plan (2021-2025).

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
			and highlight any significant changes in commodity prices and market conditions which could result in gate fee increases and decreases.		
May 2023	1	Prepare FOGO implementation plan (if FOGO trial is successful)	<ul style="list-style-type: none"> • Develop a FOGO implementation plan in consultation with the nominated FOGO processor including the following: <ul style="list-style-type: none"> ○ Opt-in vs Universal and/or transition arrangements; ○ New bin configurations (including FOGO caddy/liner provision); ○ Changes in frequency of collections; and ○ Education and communication plan. 	<p>Preparation and delivery of the FOGO implementation and education plans for approximately 60,000 households would cost ~ \$1.5m for the first year.</p> <p>This budget accounts for the delivery of kitchen caddies and bin liners for every household, employing two full time staff to educate the community and audit bins to identify and mitigate contamination, development and delivery of education materials via social media, radio, door knocking, letterbox drops and</p>	Organics Collections Grants and Local Council Transition Fund as detailed above on pages 55-56 for Action 1, FOGO trial.
October 2023	1	Deliver FOGO implementation plan (if FOGO trial is successful)	<ul style="list-style-type: none"> • Deliver the FOGO implementation plan to prepare former Hurstville Council residents for the start of the FOGO service in February 2024. 		

Georges River Council Waste Strategy (2021-2025)			Version/Date: 8 February 2021		
Commencement Date	Action	Steps Required	Details	Indicative Cost	Grants Available
				billboards.	
March 2025	16	Develop a regional Sustainable Procurement Policy with partners (SSROC) which requires minimum percentage recycled content in construction contracts, preferentially purchases local content (compost etc) and imbeds recycled content (e.g. glass) into road building contracts.	<ul style="list-style-type: none"> • Discuss a regional Sustainable Procurement Policy with SSROC and the other interested local councils in the Greater Sydney region to require minimum percentage of local recycled content in construction contracts. • If discussion lead to sufficient interest from SSROC members and other local councils in Greater Sydney, develop a policy to require minimum percentage of local recycled content in construction contracts. 	Discussion and development of a regional Sustainable Procurement Policy to be completed using in-kind resources and SSROC resources.	Not Applicable

4.2 Action plan implementation timeline

The proposed implementation timeline for the action plan is summarised in Table 13 in the form of a Gantt chart.

Note - General community education and Chemical CleanOut events are not included in this Gantt Chart.

Table 13: Georges River Council Waste Strategy - Implementation Timeline

Action	Year & Quarter	2021				2022				2023				2024				2025				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	Trial small scale FOGO service in SUDs																					
	Assess outcomes of trial FOGO service																					
	Prepare FOGO implementation plan (if FOGO trial is successful)																					
	Deliver FOGO implementation plan (if FOGO trial is successful)																					
2	Develop and implement an education campaign to move recyclables from the general waste bin into the recycling bin and reduce contamination in the recycling bin																					
3	Conduct competitive tender processes (potentially through joint procurement) for upcoming collection and processing contracts																					
4	Draft flexible contracts for future general waste and recycling bins for processing/disposal to allow Council to transition alternate processing/disposal options such as EfW																					
5	Finalise and publish the draft waste																					

Action	Year & Quarter	2021				2022				2023				2024				2025				
		Detailed Actions	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	management conditions for the Georges River Development Control Plan																					
6	Develop new database to compile all relevant waste management contract information																					
	Require all new waste management contracts to have specific reporting requirements																					
7	Continue to monitor and apply for NSW and Commonwealth government grants to improve waste management outcomes for Georges River Council																					
8	Undertake direct community consultation to inform the waste services tendered for after 2021.																					
9	Develop a contamination management procedure																					
10	Review Georges River Council's resources to combat illegal dumping and assess the value for money of Council's partnership with the local Regional Illegal Dumping (RID) squad																					
11	Assess Council's litter management infrastructure																					
12	Investigate user pay principles for residential and commercial waste																					

Action	Year & Quarter	2021				2022				2023				2024				2025			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	collections																				
13	Assess the climate change benefits of waste management services at the end of each financial year																				
14	Develop a regional Commercial Food collection contract and develop local policies to maximise commercial food diversion from landfill																				
15	Develop a regional policy and review joint procurement arrangements for new waste management technologies (e.g. anaerobic digestion, pyrolysis, gasification, incineration, etc)																				
16	Develop a regional Sustainable Procurement Policy																				

5 How will progress be measured

Progress toward implementing the proposed action plan will be measured to establish a consistent and reliable source of information regarding the LGA's waste performance over time. Furthermore, it will enable informed, evidence-based judgements to be made regarding the performance of the LGA's waste services and the effectiveness of the actions undertaken.

In order to record and be able to compare data over time, it is proposed that progress reports be prepared on a six-monthly basis in the first two years, followed by annual progress reports, to summarise the progress made towards implementing the 2021 to 2025 action plan.

The key metrics assessed in each progress report should include:

- The timeliness of implementation;
- Measurable changes in waste performance including but not limited to, resource recovery, greenhouse gas emission reductions and contamination rates;
- Community response to implementation; and
- The efficiency of spending.

As such, the report should provide:

- Detail of any delays to the proposed implementation timeline or necessary restructures to the timeline due to practical or unforeseen circumstances;
- Waste generation, recycling and disposal performance data from the last financial year and comparisons to the benchmark established in this strategy for 2019/20 levels;
- Commentary on the community's reception of various changes implemented under the strategy; and
- Details regarding actual financial spend on implementing the proposed action/s, with comparison to the initial budget proposed for the action/s.

The progress reports will be issued to Council's executive within three months of the end of the assessment period.

In 2025, Georges River Council will identify and assess the actions required in the next five years (2025 to 2030) to continue to improve waste management outcomes in accordance with the vision and strategic objectives outlined in Sections 2.1 and 2.2 above.

References

Australian Bureau of Statistics (2017), 3218.0 – Regional Population Growth, Australia, 2015-16

Australian Bureau of Statistics (2016), 2016 Census QuickStats – Georges River Council

City Plan Strategy & Development (2017), Kogarah North Precinct Urban Design Strategy, Prepared on behalf of Georges River Council

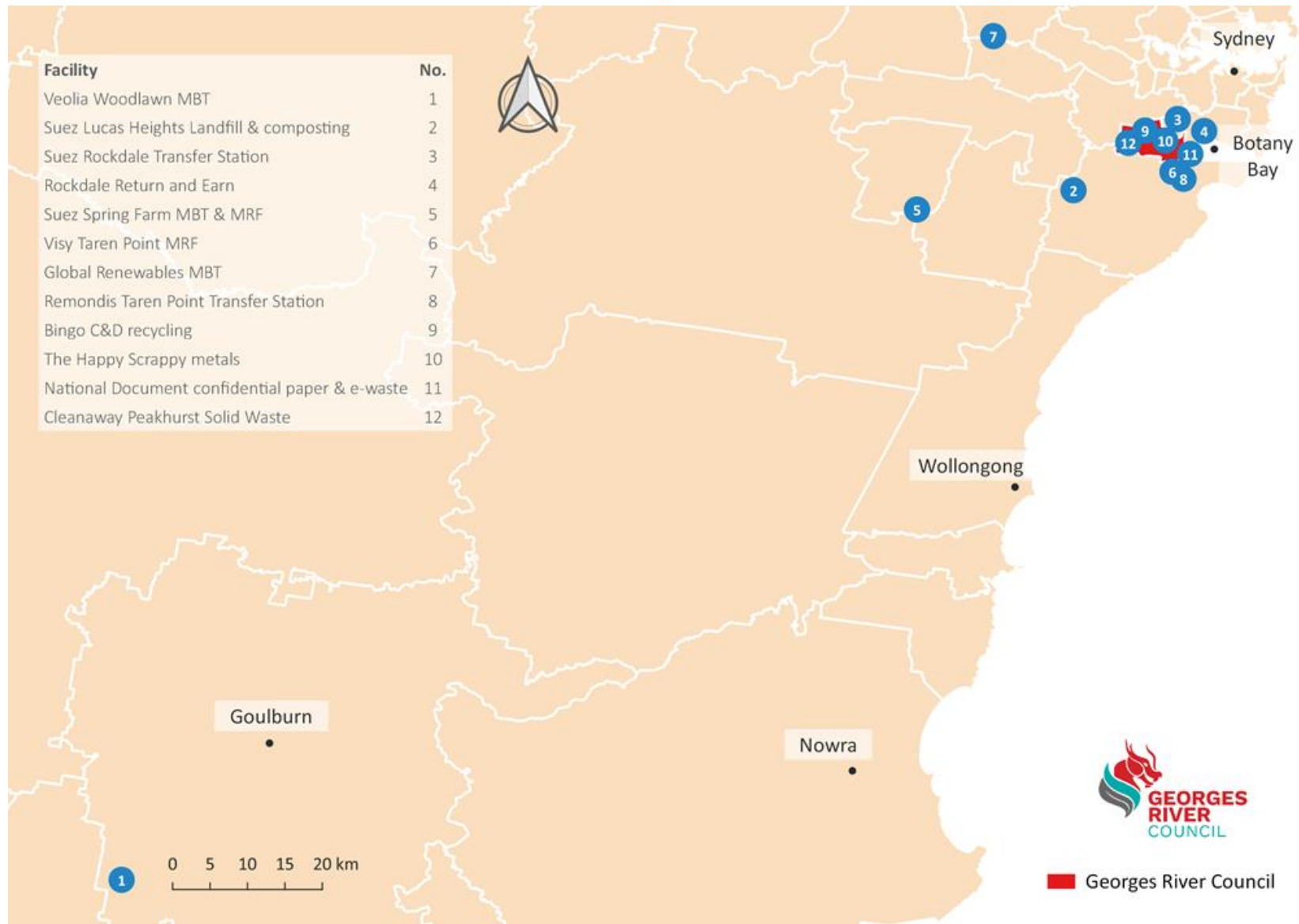
Commonwealth of Australia (2018), 2018 National Waste Policy: less waste more resources,

NSW Department of Planning and Environment, 2016, 2016 New South Wales State and Local Government Area Population and Household Projections, and Implied Dwelling Requirements

NSW EPA, 2017, NSW Local Government Waste and Resource Recovery Data Report 2014-15

NSW EPA, 2019, NSW Local Government Waste and Resource Recovery Strategy Progress Report 2017-18

Appendix A Waste and recycling infrastructure



Appendix B Georges River Council Waste Education Programs

Table 14: Georges River Council Waste Education Program Summary

Program/Initiative	Target Audience	Past Yearly Outcomes*
Clean Up Australia Day	Residents/Business	26 registered sites in the Georges River Council LGA with an estimated 1,656 volunteers participating collecting approximately 55 tonnes of rubbish
Retail Your Rubbish	Residents	39 households participated and hosted a sale with approximately 148 buyers visiting McRaes Reserve
Strata and Building Manager – Waste Information Pack	Residents	Georges River Council has distributed to 100% of strata managers engaged in 2019 in person and via mail
Commercial Waste Service and Business Information Pack	Business	Georges River Council has distributed and engaged with 58 businesses in the LGA
Plastic Free July DIY Body Care Workshops	Residents	Georges River Council delivered 2 workshops with 14 participants
Bower Repair Workshops	Residents	3 workshops delivered with 35 participants
SSROC CALD Education Workshops	Residents	SSROC delivered 156 education workshops reaching 2,474 participants
Composting and Worm Farming Workshops	Residents	7 workshops delivered teaching 170 participants
World Environment Day Plastic Bag Swap	Residents	500 plastic bags collected, and 100 reusable bags provided to participants
Single Use Plastic Nightmares Halloween Movie Night	Residents	Upcoming event in October 2019
National Recycling Week 2040 Movie Night	Residents	Upcoming event in November 2019
Brim Trim Program with Ethnic Communities' Council of NSW	Business	1 business participating and engaging with the Bin Trim Program through EEC
Responsible Cafes	Business	38 cafes in the LGA are participating and 46 reusable cups have been distributed. An estimated 13,500 disposable cups or 109 kgs per year have been avoided.
Litter Audit Pilot	Schools	1 audit completed with 150 participating students

Program/Initiative	Target Audience	Past Yearly Outcomes*
School Litter Art Competition Pilot	Schools	2 schools participated with 394 entries and 39 flags displayed in LGA CBDs
World Environment Day Speaking 4 the Planet	Schools	4 high school participated with 57 entries
Keep Australia Beautiful EnviroMentors Program	Schools	16 schools participated reaching 3,709 students through 140 education sessions
GEORGES RIVER COUNCIL Preschool Program	Schools	Upcoming event
Free School Recycling Bins	Schools	20 schools participated with 60 recycling bins provided, collecting an estimated 391 tonnes of recycling

*Outcomes based on a reporting period between October 2018 to September 2019.

Appendix C Waste and recycling infrastructure overview

Table 15: Waste and recycling infrastructure

Facility	Operator	Waste types accepted	Additional Comments
Woodlawn Bioreactor	Veolia	Putrescible waste	Council waste is transported to the Woodlawn Bioreactor via train from the Clyde intermodal facility in Sydney. Landfill gas is captured to generate electricity. A portion of Council's general waste is processed at this facility.
Lucas Heights Resource Recovery Park	Suez	Asbestos, construction and demolition, liquid waste, metals, old clothing, batteries, paint, waste oil, comingled waste, tech waste, garden waste, gas bottles, mixed putrescible, non-putrescible, paper and cardboard, soil and tyres.	Open seven days with a public drop-off point. Fees apply. A portion of Council's general waste is processed at this facility. Council's garden organics is processed at this facility to produce compost.
Rockdale Resource Recovery Park	Suez	Batteries, paint, oil, comingled waste, tech waste, garden waste, gas bottles, hazardous waste, mixed putrescible, non-putrescible and tyres.	Open seven days with a public drop-off point. Fees apply.
Spring Farm MRF	Suez	Comingled recycling.	Not open to the public. Council's comingled recycling is processed at this facility.
Spring Farm Resource Recovery Park	Suez	Putrescible waste and non-putrescible waste.	Open to the public.
Rockdale Return and Earn	St George Recyclers	Eligible CDS containers.	St George Recyclers operate an automated depot for the receipt and payment of 10 cent per container for eligible CDS containers. They also provide a free collection service for source separated eligible containers.
Taren Point Transfer Station	Remondis	Garden organics, mixed non-putrescible waste, metals, wood and some hazardous items such as batteries and gas bottles.	Open to the public.
Tarren Point MRF	Visy	Comingled recycling.	Not open to the public. Currently closed due to damages

Facility	Operator	Waste types accepted	Additional Comments
			from a fire in July 2019.
Scrap Metal Rockdale	St George Recyclers	Scrap metal.	Buy non-ferrous metals such as copper, brass, aluminium, etc.
Mortdale Recycling Centre	Bingo	Construction and demolition waste.	Currently closed, site is being modified to improve operations.
Clothing Donation Bins	King Cotton Salvation Army	Textiles.	Multiple bins locations throughout the following locations – Hurstville, South Hurstville, Riverwood and Mortdale.
Peakhurst Solid Waste Services	Cleanaway	General waste, organic waste and residential waste streams.	Not open to the public. Services the Canterbury-Bankstown and Inner West Councils.
National Document Shredding Service	National Document Shredding Service	Document destruction and tech waste.	n/a.