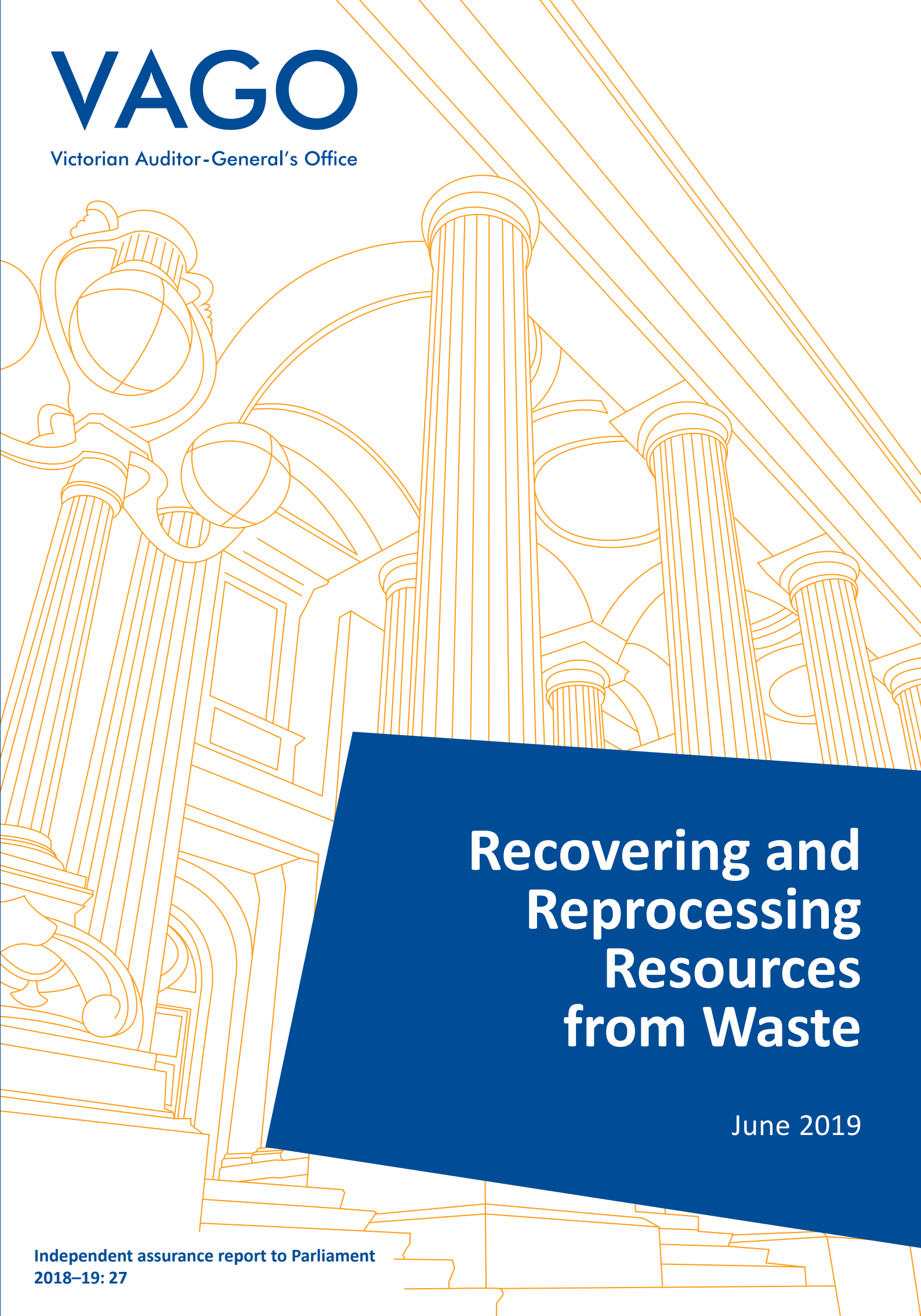


# VAGO

Victorian Auditor-General's Office



## Recovering and Reprocessing Resources from Waste

June 2019

Independent assurance report to Parliament  
2018–19: 27





Victorian Auditor-General's Office

# Recovering and Reprocessing Resources from Waste

**Independent assurance report to Parliament**

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June 2019

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Victorian Auditor-General's Office

The Hon Shaun Leane MLC  
President  
Legislative Council  
Parliament House  
Melbourne

The Hon Colin Brooks MP  
Speaker  
Legislative Assembly  
Parliament House  
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my report  
*Recovering and Reprocessing Resources from Waste*.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Andrew Greaves', is written over a faint, light blue circular stamp or watermark.

Andrew Greaves  
*Auditor-General*

6 June 2019



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## Acronyms

C&D	construction and demolition
C&I	commercial and industrial
CRWM	combustible recyclable and waste materials
DELWP	Department of Environment, Land, Water and Planning
DTF	Department of Treasury and Finance
EPA	Environment Protection Authority
FOGO	food organics and garden organics
GFV	<i>Getting Full Value</i>
LHFW	Love Food Hate Waste
MDS	<i>Victorian Market Development Strategy for Recovered Resources</i>
MILL	Municipal and Industrial Landfill Levy
MoU	Memorandum of Understanding
MSW	municipal solid waste
MUD	multi-unit development
MWRRG	Metropolitan Waste and Resource Recovery Group
MWRRIP	<i>Metropolitan Waste and Resource Recovery Implementation Plan</i>
NSW	New South Wales
PAN	pollution abatement notice
RISP	<i>Recycling Industry Strategic Plan</i>
RSS	ResourceSmart Schools
RWRRIP	regional waste and resource recovery implementation plan
SA	South Australia
SV	Sustainability Victoria
SWRRIP	<i>Statewide Waste and Resource Recovery Infrastructure Plan</i>
TZW	<i>Towards Zero Waste</i>
TZWMP	<i>Towards Zero Waste Management Plan 2019–23</i>
VAGO	Victorian Auditor-General's Office
VLGAWSR	<i>Victorian Local Government Annual Waste Services Report</i>
VORRS	<i>Victorian Organics Resource Recovery Strategy</i>
VRIAR	<i>Victorian Recycling Industry Annual Water Services Report</i>
WES	<i>Victorian Waste Education Strategy</i>
WRR PCB	Waste and Resource Recovery Project Control Board

WRRG	waste and resource recovery group
WRRIP	waste and resource recovery implementation plan
WtE	waste to energy

## Abbreviations

Banyule Council	Banyule City Council
C&I Strategy	<i>Metropolitan C&amp;I Waste and Resource Recovery Strategy</i>
CRWM PIA	<i>Management and storage of CRWM Policy Impact Assessment</i>
CRWM Policy	<i>2018 Waste Management Policy (Combustible Recyclable and Waste Materials)</i>
e-waste	electronic waste
e-waste PIA	<i>Managing e-waste in Victoria Policy Impact Assessment</i>
e-waste Policy	<i>Waste Management Policy (e-waste)</i>
MAC Review	<i>Ministerial Advisory Committee Review on Waste and Resource Recovery Governance Reform</i>
Monash Council	City of Monash Council
MUDs toolkit	<i>Improving resource recovery in multi-unit developments toolkit</i>
the Act	<i>The Environment Protection Act 1970</i>
the Framework	Victorian Waste and Resource Recovery Infrastructure Planning Framework
the Guideline	<i>Data and Reporting Guideline for Waste Management Facilities</i>
the Minister	Minister for Energy, Environment and Climate Change
the Standards	<i>Better Apartment Design Standards</i>
the Taskforce	Resource Recovery Facilities Audit Taskforce

# Audit overview

Sustainability Victoria (SV) estimates from available data that in 2016–17 Victorians:

- generated nearly 12.9 million tonnes of waste—with metropolitan Melbourne accounting for around 80 per cent of this
- recovered 67 per cent of the waste generated for recycling and sent the remaining 33 per cent to landfills across the state.

Victorians recover a range of recyclable material from three waste streams:

- municipal solid waste (MSW)
- commercial and industrial (C&I) waste
- construction and demolition (C&D) waste.

Recyclable materials include food organics and garden organics (FOGO), plastics, paper and cardboard, aluminium cans, rubber (including tyres), electronic waste (e-waste), bricks and other construction materials.

The *Environment Protection Act 1970* (the Act) is the primary legislation dealing with the state's waste management and resource recovery. It introduces a waste hierarchy, with waste avoidance at the top, representing the most important mechanism to reduce waste, followed by re-use, and then recycling.

The Chinese government's decision to substantially limit its importation of recyclables (the Chinese Sword Policy) led to a significant decline in Australian waste exports. This has increased costs for councils that were previously able to sell their recyclables, but now must pay to have them removed.

Given the importance of waste management to the Victorian community and the current pressures on the system, this audit examined whether responsible agencies are maximising the recovery and reprocessing of resources from Victoria's waste streams.

The audit included Banyule City Council (Banyule Council), City of Monash Council (Monash Council), the Department of Environment, Land, Water and Planning (DELWP), the Victorian Environment Protection Authority (EPA), Metropolitan Waste and Resource Recovery Group (MWRRG), and SV.

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## Conclusion

Victorian agencies responsible for managing the waste sector are not responding strategically to waste and resource recovery issues. As a result, they are not minimising Victoria's need for landfill nor maximising the recovery and reprocessing of waste resources—recyclables. A significant amount of the waste that Victorians send to landfill could be recycled or reprocessed, and some recyclables that Victorians segregate for recycling eventually end up in landfills.

DELWP has not fulfilled its leadership role to ensure that the state operates under an overarching waste policy. Without such a policy since 2014, Victorian waste management agencies have been operating in an uncertain environment and are unable to effectively prioritise their limited time and resources.

In a **circular economy**, materials, energy, and other resources are used productively for as long as possible to retain value, maximise productivity, minimise greenhouse gas emissions, and reduce waste and pollution.

The lack of an overarching statewide policy deprives responsible government agencies and their stakeholders of a clear and definitive direction for waste management, which means that government agencies' responses to waste issues have been ad hoc and reactive. DELWP advise that it is developing a policy—which will be in line with circular economy principles—however, it is not due until 2020.

In the absence of an overarching waste policy, relevant agencies have also not been able to effectively plan for sufficient infrastructure and markets to manage the state's waste. Recent significant restrictions in the waste export market has brought this issue into sharp focus. This risk was not without early warning. DELWP and SV did not identify signals as early as 2013 that China was changing its approach and that the state's heavy reliance on exporting recyclables, particularly plastic and paper, left it vulnerable. In July 2018, DELWP released the *Recycling Industry Strategic Plan* (RISP). However, the RISP does not include a definitive plan for new infrastructure to address emerging issues. Without clear state-level plans for how to manage recyclables in this new environment, stockpiles will likely continue to grow and pose unnecessary risks, and waste to landfills will continue to rise.

EPA has not effectively monitored and addressed the growth of inappropriately managed stockpiles across the state, which pose health and fire risks to the community and the environment. As a number of toxic fires in waste facility sites demonstrate, the need for greater oversight of waste operators is evident. However, since the significant Coolaroo fire in July 2017, EPA has increased its oversight of the state's resource recovery facilities.

These issues—lack of action to minimise waste, to invest in infrastructure, and closely regulate the sector—have occurred while the Sustainability Fund, a fund set up under the Act to support best practices in waste management, had \$511.3 million as at 30 June 2018.

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## Findings Leadership for waste management

### No overarching statewide policy

Victoria has not had a statewide waste policy since 2014. This means that responsible agencies have directed their efforts and resources on waste management activities for over five years without the clear direction that an overarching policy provides. To address the gap, DELWP is currently developing the Circular Economy Policy, which it expects to complete by 2020.

### Unclear statewide guidance

Despite changes arising from the recommendations of our 2011 report, *Municipal Solid Waste Management*, and the 2013 *Ministerial Advisory Committee Review on Waste and Resource Recovery Governance Reform* (MAC Review), roles and responsibilities in the waste and resource recovery sector remain unclear.

DELWP clarified state agency roles in its 2019 update to the 2015 *Waste and Resource Recovery Portfolio Collaboration Framework*. This document captures the roles of DELWP, SV, EPA and the waste resource and recovery groups (WRRG). However, DELWP has failed to clearly communicate this—and councils and industry continue to be confused about state agency roles.

There are six waste strategies intended to guide waste and resource recovery in metropolitan Melbourne. These identify 23 goals or objectives, 23 strategic directions, and 103 actions. Collectively, they do not provide clear and coherent guidance.

In the absence of a statewide policy, some stakeholders mistakenly believe that the *Statewide Waste and Resource Recovery Infrastructure Plan* (SWRRIP) is the statewide waste policy. In fact, the SWRRIP is one of four key strategies and plans—the others are the *Victorian Organics Resource Recovery Strategy* (VORRS), the *Victorian Market Development Strategy for Recovered Resources* (MDS) and the *Victorian Waste Education Strategy* (WES)—meant to underpin the implementation of the statewide policy.

### Limited implementation of statewide strategies

SV is not effectively implementing its four strategies that guide the waste and resource recovery sector in Victoria to ensure waste to landfill is minimised because the SWRRIP, VORRS, MDS and WES:

- include many vague actions that do not provide specific guidance on how to achieve identified objectives or clearly plan which projects and activities must occur before an action is complete
- do not have targets, adequate performance measures or specify frequency of reporting.

Three years since their publication, SV does not have a clear plan to implement all of the actions in the VORRS, MDS and WES. SV's limited implementation of the VORRS is a missed opportunity to improve the recovery rate of organic material by 2020. In contrast, the government allocated funding to fully implement the 2018 RISP to stabilise the recycling sector and develop markets for recycled materials. It is accompanied by a more detailed implementation plan that articulates the expected outcomes or targets, time lines and lead agencies. DELWP reports on its implementation to the Minister for Energy, Environment and Climate Change (the Minister).

DELWP, SV and MWRRG report some key outputs from their various strategies publicly in their annual reports. Despite this, they are not clearly, transparently, and publicly reporting on the progress of the individual actions, overall objectives and outcomes of their strategies in a way that enables industry and the community to track their progress.

Since 2017–18, the government has allocated SV \$785 000 from the Sustainability Fund to deliver the VORRS; \$8.31 million to deliver the WES and related education programs; and \$6.42 million to deliver the MDS. SV advised us that the allocations are not sufficient to fully implement all the actions outlined in these strategies. However, SV did not provide detailed advice to government that specified and costed the remaining action items when seeking funding to deliver them. In addition, the government has not allocated MWRRG additional ongoing funding to implement expanded responsibilities for C&I and C&D waste.

We note that as at 30 June 2018, the balance of the Sustainability Fund remained at \$511.3 million. As per legislation, one of the purposes of this funding is for best practices in waste management. The revenue that contributed to this fund balance has been previously recognised in the state's bottom line. Any future expenditure from the fund accordingly, will act to reduce the bottom line.

### Gaps in statewide waste management instruments

Current waste management instruments—relevant plans, strategies, policies and regulations—have significant gaps. They do not give policy direction or guidance on waste avoidance, hazardous waste management, multi-unit developments (MUD), waste to energy (WtE), or C&I waste.

**A multi-unit development** is when more than one dwelling is built on a single lot, including more than one house, unit, or townhouse.

Responsible agencies are taking limited action at the statewide, regional and local levels to avoid generating waste. While the current waste strategies and plans refer to the waste hierarchy and mention waste avoidance, none focus directly on improving waste avoidance practices. As a result, responsible agencies do not give avoidance actions enough preference or attention when managing waste.

The SWRRIP does not include planning for hazardous waste infrastructure. SV acknowledges this gap and plans to include this in the next iteration of the SWRRIP due in 2023. However, given issues arising from the inappropriate storage and management of hazardous waste, the government allocated \$2.2 million in DELWP's 2018–19 budget to better manage the disposal of hazardous waste and to develop a hazardous waste policy.

DELWP, SV, MWRRG and Victorian councils are not taking strong enough action to ensure new and existing MUDs offer recycling collection services. Action is needed to make sure that as the number of MUDs increases there is not an overall decrease in recovery rates.

Council kerbside waste collection is not available to most existing MUDs, and private operators are engaged to collect waste from these sites. While councils can influence how much space new MUDs allocate for waste infrastructure through the planning process, they currently do not require new or existing MUDs that are serviced by commercial operators to offer comingled and organics recycling services. Most MUDs have only one waste collection service—for landfill.

**WtE** technologies consist of any waste treatment process that creates energy in the form of electricity, heat or transport fuels from a waste source.

There is currently no WtE policy to guide government agencies and potential investors on what WtE technologies are acceptable and how they should implement them in Victoria. This is contributing to limited investment in new technologies.

Responsible agencies are taking limited action at the statewide, regional and local levels to increase diversion of C&I waste from landfill, and instead focus their efforts on MSW. Sending C&I waste to landfills remains a relatively low-cost option for business. As a result, many businesses choose to send recyclables to landfill rather than recycling them.

### Council waste plans

Banyule Council and Monash Council are ably fulfilling their roles in delivering waste and resource recovery services to their communities. Both councils have managed to provide continued waste services despite the challenges brought about by the Chinese Sword Policy. This is due in part to the continued ability of their contracted resource recovery facility operator—both councils use the same operator—to process councils' recyclables.

Councils' waste plans include targets, action plans and performance indicators, and both audited councils are collaborating with MWRRG to achieve cost efficiencies in their waste service contracts, including organics processing, collection of recyclables and landfill services. Both councils are also taking steps to ensure that their waste services to their communities remain uninterrupted.

## Understanding Victoria's waste data

### Inaccurate and incomplete waste data and reporting

SV's 2016–17 *Victorian Local Government Annual Waste Services Report* (VLGAWSR), initially published in September 2018, stated that nearly all recyclables segregated by Victorians are recycled, as did the 2013–14 and 2015–16 VLGAWSRs. This is not the case. While nearly all recyclables are sent to recovery facilities for sorting, there is currently no data on how much of this is recycled. During the audit, SV acknowledged that it did not use the term 'recycled' correctly in this context, and corrected the online version of the 2016–17 VLGAWSR report accordingly.

While waste data collection is a shared responsibility among SV, EPA, councils and WRRGs, SV is responsible for its statewide oversight, coordination and reporting.

The current incomplete and unreliable Victorian waste data limits the government's ability to understand the nature and volume of the state's waste, what becomes of collected recyclables, and where they end up. Waste data quality issues also affect the government's ability to make well informed planning and investment decisions to address current and future risks and needs.

The incompleteness and unreliability of current Victorian waste data also means that DELWP and SV have limited understanding of whether the unchanged statewide recovery rate of 67 per cent from 2012–13 to 2016–17 is accurate, and whether it is due to improved resource recovery, or unfavourable reasons such as unaccounted waste stockpiling or illegal dumping.

Currently reported state waste data:

- excludes information about the movement of recovered recyclable and waste materials or of illegally dumped materials (data not collected)
- excludes information on the nature and extent of stockpiles—permitted or otherwise—across the state (data not collected)
- excludes information on the level of market demand for Victorian recyclables (data not collected)
- excludes waste sent to landfills that are not subject to the landfill levy (data not collected)
- excludes hazardous waste sent to landfill—data is collected by EPA but not included in SV's annual waste data reporting
- are estimates—not based on actual data—for the MSW, C&I and C&D waste streams, including the reported tonnage for recovered resources such as paper and cardboard, plastics, glass and steel
- for many categories, is collected by SV through voluntary surveys of councils and waste recovery and reprocessing operators, and as such is incomplete and not necessarily accurate
- is collected by councils and waste operators in variable ways, including counts of trucks and visual estimates
- is subject to very limited quality assurance by SV, which focuses on checking for significant changes in data from year to year.

SV has been aware of data quality issues for at least 15 years, particularly regarding the reliability and completeness of MSW data. In response, SV has developed the Waste Data Governance Framework and established a waste data portal for sharing waste information across relevant agencies.

However, while SV has enabled the sharing of some waste data and improved its collaboration with responsible agencies and councils, it has made little progress to address identified data quality issues. SV advised us that a lack of regulatory measures means it cannot resolve identified data quality issues. If this is the case, then SV should advise government of the necessary regulatory changes to enable this to occur.

## Identifying and managing risks

### Market demand for recyclables—government's response

To date, waste management in Victoria has focused on separating and recovering recyclables from waste otherwise destined for landfills. The push to recover recyclables, however, has not always been matched by market demand for recycled products. Without accessible and competitive end markets, the number and size of stockpiles will continue to grow, and recyclables will eventually end up in landfills.

DELWP, as the lead Victorian agency with portfolio responsibility for the waste sector, could have more effectively intervened to minimise the adverse consequences of China's significant import restrictions. It did not provide strong, timely advice to government on the risks associated with Victoria's dependence on overseas markets for recycling. It was not until January 2018—when the significant export restrictions had already started—that DELWP and SV started to develop a list of possible interventions and support councils to develop contingency plans.

In February 2018, the government provided temporary relief funding of \$12 million to assist councils with increased waste collection costs resulting from the Chinese Sword Policy. In July 2018, the government released the RISP that lists, as its first goal, the stabilisation of the state's recycling system.

On 14 February 2019, EPA ordered a resource recovery operator to stop receiving collected recyclables at its Coolaroo and Laverton facilities because its significant waste stockpiles at these sites posed an unacceptable fire risk. The operator services 34 Victorian councils, including 18 metropolitan councils, and recovers more than half of the state's kerbside recyclables.

After EPA's actions, DELWP worked with relevant agencies to identify contingency measures for the collected recyclables. DELWP advised that, given the quantities involved, preventing recyclables from going to landfill was not a viable option. DELWP documentation suggests that nearly 500 tonnes of collected recyclables were sent to landfills for every day that the two facility sites were closed.

In many ways, China's heightened regulation under its Green Fence Policy in 2013 foreshadowed its subsequent announcements to significantly restrict its waste importation. Consequently, DELWP could have more proactively monitored earlier developments in China to better anticipate potential impacts on the state's waste.

**Collective or joint procurement** is the process of developing and managing multi-council contracts for waste management and resource recovery services and facilities.

The councils included in this audit—Monash Council and Banyule Council—have service contracts with another resource recovery operator and were not affected by EPA's actions against the sanctioned waste operator. Both councils are proactively working to ensure the continued collection of their recyclables, including coordinating with MWRRG to participate in the latter's collective recycling procurement contract that is expected to be available in 2020.

In April 2018, the Chinese government announced that it would stop importing paper and plastic wastes effective 1 January 2019—regardless of contamination levels. While China did not completely enforce this announcement by January 2019, many other Asian countries including Malaysia, Thailand and Vietnam also declared waste import restrictions.

SV is the state's lead agency tasked to achieve the government's goal to develop markets for recycled materials. To date, however, SV's efforts have largely targeted new and expanded uses for products that use recovered glass, tyres and recycled concrete. While SV has made progress in this regard, including working on the approval of revised product specifications, more could be done to target new markets for more problematic recyclables, such as plastics, where only limited opportunities have been identified to date.

### Insufficient infrastructure

Further risks for the sector exist given the inadequacy of waste infrastructure planning. Neither SV's SWRRIP nor MWRRG's *Metropolitan Waste and Resource Recovery Implementation Plan* (MWRRIP) provide for future infrastructure, and neither consider the impacts of the closure of international export markets. Based on the capacity analysis prepared by WRRGs in 2014 and 2015, the SWRRIP states that there is sufficient resource recovery and landfill infrastructure to service Victoria until 2025. However, this analysis included export markets and was based on SV waste data, of which quality and completeness is significantly limited.

It has become clear that Victoria needs more local reprocessing facilities to convert recovered materials into products that can be used again, or to energy. However, SV's 2018 update of the SWRRIP did not consider the impacts of the significant consequences of the Chinese Sword Policy on Victoria's waste infrastructure needs despite China's announcement in July 2017.

According to the SWRRIP and the MWRRIP, Melbourne is at risk of inadequate landfill capacity by 2025 if appeals against approved planning permits or works approvals are successful. If the landfill capacity of a metropolitan Melbourne landfill cannot be increased, a new landfill of similar capacity will need to be scheduled by 2021 and commissioned by 2026.

MWRRG is currently working with DELWP, SV and south-east metropolitan councils to reduce their reliance on landfills by establishing new and more efficient resource reprocessing infrastructure. This may include the use of WtE technology (discussed in Part 4). MWRRG advised us that it is working with south-east metropolitan councils to establish advanced waste processing to avoid shortfalls in Melbourne's landfill capacity by 2026.

MWRRG advised us that it has commenced a review of its infrastructure capacity through a review of the MWRRIP, taking into consideration export market changes. Further, MWRRG is working to collectively tender for recyclables collection services on behalf of metropolitan councils, to be available by 2020, to reduce current reliance on the export of recyclable materials and attract local options.

**Combustible recyclable and waste materials** include paper, cardboard, plastic, rubber, textile, organic, metals or other combustible material which is considered waste.

## Waste stockpiles

EPA has not effectively regulated the waste industry. It has been slow to act—firstly with combustible recyclable and waste materials (CRWM) in recovery facilities—and more recently with hazardous waste stockpiles. In both instances, EPA intervened only at the point of crisis. The significant fire at Coolaroo in July 2017 spurred EPA to take more serious action.

As waste materials degrade over time, many stockpiled resources end up in landfills. Stockpiles, either waiting for markets or illegally dumped, in time turn into pseudo-landfills. The extent of waste stockpiles across Victoria shows that they are not isolated instances of poor waste regulation—it has become a large-scale and systemic statewide problem.

EPA has since begun clearing some of the state's most problematic waste stockpiles. However, there is little assurance that its expenditure for these clean-ups will be fully recovered from responsible parties.

### Stockpiles at resource recovery facilities

In response to the significant fire at Coolaroo in July 2017, the government established the Resource Recovery Facilities Audit Taskforce (the Taskforce) to identify and address waste stockpiles across the state. The Taskforce identified 831 sites—of which five were classified as posing extreme risk and a further 209 as high risk.

Many of the identified sites are located very close to residential areas. The December 2017 Taskforce report noted that inadequately managed stockpiles of combustible recyclables pose serious and unacceptable risks to the Victorian community and environment.

### Hazardous waste in metropolitan Melbourne warehouses

Following the August 2018 West Footscray fire, EPA identified warehouses illegally filled with drums containing significant amounts of highly flammable hazardous chemicals. EPA regulates the movement of hazardous wastes, and none of these sites—located near residential areas—hold EPA permits to store them.

On 5 April 2019 a fire broke out at another hazardous waste storage site in metropolitan Melbourne. In contrast to the previously identified hazardous waste storage sites, the operator of this site has an EPA licence to process toxic chemical waste. EPA suspended its license the month before the fire for holding more waste than it was permitted to store, and not adequately storing it—in breach of its licence conditions.

Affected Victorian communities are understandably concerned about EPA's ability to effectively regulate the management of hazardous wastes and waste stockpiles. Given the frequency of fires, EPA needs to prioritise addressing illegal and non-compliant behaviour in the hazardous waste sector. The Victorian community has the right to expect that where recovery facilities and the storage of waste pose health and environmental risks, EPA will promptly identify these risks, work with relevant agencies, and apply the full force of the law.

### Stricter regulations in other jurisdictions

Strict and effective regulations in other Australian jurisdictions meant that it was cheaper to transport waste materials to Victoria than to dispose of them to licensed sites in either South Australia (SA) or New South Wales (NSW). This contributed to the state's growing stockpiles—particularly recovered recyclables (prior to 2018) and end-of-life waste tyres (prior to 2014).

### Enforcement provisions of the Act

The Act has provisions against improper waste management, which carries substantial penalties. EPA's more frequent use of these provisions could have served as a strong disincentive to irresponsible and illegal practices that have resulted in large-scale waste stockpiles across Victoria. However, EPA advised that the post-harm or post-damage focus of these provisions made it difficult to successfully prosecute cases against waste operators.

Because of perceived limitations of the Act's provisions to address current improper waste management practices, the government worked to give EPA new legislation that focuses on a general environmental duty—with a preventative focus—to protect human health and the environment. EPA advised that these 2018 amendments to the Act, which will take effect in 2020, give it more power to better address waste issues.

## Changing community behaviour

### Disposal of waste to landfill

According to available data, SV estimates that Victorians send 33 per cent of their waste to landfill. A 2015 bin audit by a metropolitan Melbourne council estimates that 65 per cent of what is sent to landfill could be viably recovered and reprocessed. This means that there is significant opportunity to reduce what is currently being sent to landfill.

### Waste avoidance

Nothing within the current waste instruments focuses directly on improving waste avoidance practices. As a result, DELWP, SV, MWRRG and councils focus their efforts on managing waste already in the system and do not give avoidance actions sufficient preference or attention. This is not consistent with the waste hierarchy identified in the Act, which gives waste avoidance the highest priority.

### Waste education

Many Victorians still do not fully understand what is and what is not recyclable due to the lack of a consistent, sustained statewide approach to education. Agencies run disparate short-term education campaigns, and this is compounded by inconsistent council recycling practices across the state.

SV, MWRRG and councils have delivered waste education using several education programs and communication campaigns that have raised some awareness of waste and resource recovery issues. However, they have delivered these campaigns inefficiently because they do not adequately leverage materials already developed by other agencies.

There is an opportunity for closer collaboration between the tiers of government in designing and delivering waste education programs, where councils and WRRGs distribute statewide messages locally and regionally. The model SV used for its e-waste education campaign reflects this approach. It developed education materials at a statewide level and distributed them to councils.

### Managing organics and e-waste

Organic waste makes up to 35 per cent of the waste sent to Victorian landfills. Responsible agencies are missing a key opportunity to decrease waste going to landfill by not placing enough focus on increasing organic waste recovery.

SV, MWRRG and both audited councils identify organic waste as the key material stream that should be targeted for recovery. Despite this, DELWP, SV and MWRRG have not taken strong enough action to address this. While government has provided limited funding for activities to increase the recycling of organics, DELWP and SV did not provide detailed enough advice to government specifying and costing out actions when seeking funding.

In contrast, the government has taken a proactive approach when it comes to e-waste, reportedly one of the fastest-growing material streams going to landfill. In 2014, the government committed to banning e-waste to reduce harm to the environment and human health and increase the recovery of valuable resources contained within it. However, DELWP did not complete the *Waste Management Policy (e-waste)* (e-waste Policy) until four years after the announcement.

DELWP advised us it took significant time to develop and finalise the policy as it consulted with affected stakeholders to develop a package of support measures that would assist the policy's implementation. Councils were reluctant to act on e-waste until details of the policy requirements were finalised. This meant that from the time the e-waste Policy was finalised in 2018 to the time the ban takes effect in July 2019, councils had limited time to sufficiently prepare in terms of:

- establishing recovery infrastructure to comply with the e-waste Policy
- setting up contracts with e-waste collectors
- educating the community about the proper management of e-waste.

As a result, councils are not fully prepared for the ban when it comes into force on 1 July 2019.

## Recommendations

We recommend that the Department of Environment, Land, Water and Planning, in collaboration with waste portfolio agencies including Sustainability Victoria, the Victorian Environment Protection Authority, the Metropolitan Waste and Resource Recovery Group, regional waste and resource recovery groups, and councils:

1. include in its overarching statewide waste policy:
  - strategies for waste avoidance (see Sections 2.5 and 5.3)
  - specific actions to achieve identified objectives, noting responsible agencies and time lines (see Sections 2.3 and 2.4)
  - an evaluation framework specifying performance measures and targets linked to objectives (see Sections 2.3 and 2.4)
  - a plan to publicly report on progress of implementation and the achievement of outcomes against identified objectives (see Sections 2.3 and 2.4)
2. study, assess and advise the Minister for Energy, Environment and Climate Change on ways to improve waste and resource recovery outcomes including:
  - reducing the sector's reliance on international markets for recyclable materials, such as encouraging establishment of local reprocessing and remanufacturing facilities, and improving recycling behaviours (see Sections 4.2 and 4.3)
  - effective market interventions for recovered resources, for example, government procurement targets for recyclable materials (see Section 4.2)
  - possible levers to improve recycling of resources from waste, which may include expanded product stewardship arrangements, package labelling on products, and a container deposit scheme (see Section 4.2)
  - price signals such as changes to the landfill levy rate and the possible impact of this on recovery rates (see Section 4.3)
3. develop and publish a document that states the roles and responsibilities—including responsibilities indicated in disparate waste policies and strategies—of all portfolio agencies, local councils and other relevant entities involved in waste management and regulation and communicate this to councils and waste operators (see Section 2.2)
4. support the Metropolitan Waste and Resource Recovery Group in its capacity-building initiatives to train councils' staff and waste management and resource recovery groups' staff so that they can effectively deliver their respective waste management roles and responsibilities, including for collective procurement, land-use planning, multi-unit developments' waste management, and food and garden organics (see Section 5.5)
5. strengthen the Planning Scheme to ensure multi-unit developments have waste management plans designed and approved in accordance with the *Better Practice Guide for Waste Management and Recycling in Multi-unit Developments* (see Section 2.5)

6. advise the Minister for Energy, Environment and Climate Change on options to divert organic waste from landfill, including:
  - maximising the collection of organic waste from commercial and industrial establishments (see Sections 5.2 and 5.6)
  - the required resources to support the rollout of food and garden organics kerbside collections for all local governments (see Sections 5.5 and 5.6).

We recommend that Sustainability Victoria:

7. update the *Statewide Waste and Resource Recovery Infrastructure Plan*, *Victorian Organics Resource Recovery Strategy*, *10-year Victorian Market Development for Recovered Resources Strategy*, *Victorian waste education strategy* and *Waste Data Governance Framework*, having regard to changes in market conditions and community expectations and identifying outstanding actions and clearly outlining priorities for the future (see Section 2.4)
8. ensure that the infrastructure capacity analysis of waste and resource recovery groups' waste and resource and recovery implementation plans are up to date and allow regional councils to plan and prepare for their current and future waste infrastructure needs (see Section 4.3)
9. develop a clear business case for the *Statewide Waste and Resource Recovery Infrastructure Plan*, *Victorian Organics Resource Recovery Strategy*, *10-year Victorian Market Development for Recovered Resources Strategy*, *Victorian waste education strategy* and *Waste Data Governance Framework*, and submit to government a funding proposal to deliver on identified priorities and implementation plans (see Section 2.4)
10. deliver a sustained statewide recycling campaign, with local delivery models, to enable improved behaviours over time—including waste avoidance and recycling food waste (see Section 5.4)
11. develop and implement an evaluation framework for the *Statewide Waste and Resource Recovery Infrastructure Plan*, *Victorian Organics Resource Recovery Strategy*, *10-year Victorian Market Development for Recovered Resources Strategy*, *Victorian waste education strategy* and *Waste Data Governance Framework* including targets based on sound evidence and assumptions, performance measures and regular public reporting on the achievement of outcomes (see Sections 2.3 and 2.4)

12. improve the quality and reliability of state waste data by:

- working with the Department of Environment, Land, Water and Planning, the Victorian Environment Protection Authority, waste and resource recovery groups and councils to (i) identify categories of waste data that are critical for government planning and decision-making; and (ii) develop an action plan to obtain complete, accurate and reliable data that includes, where appropriate, mechanisms for mandatory data collection from councils, waste transfer stations, recovery and reprocessing operators, and other holders of relevant waste information whether public or private (see Sections 3.2 and 3.3)
- completing its implementation of the recommendations from its 2014 waste needs and gap analysis, including releasing an updated *Data and Reporting Guideline for Waste Management Facilities* and driving its effective implementation across the state (see Section 3.4)
- improving guidance and support for annual data surveys to help councils and waste operators in providing more accurate and reliable waste data (see Sections 3.3. and 3.4)
- reporting clearly on waste data in its Victorian Local Government Waste Services Report and Victorian Recycling Industry Annual Report by:
  - ensuring waste terminologies and definitions are consistent, including a glossary of terms for each report, and ensuring their appropriate and consistent use across the two reports (see Sections 3.2 and 3.3)
  - clearly articulating the nature of data being presented and where appropriate clarifying the difference between the data reported in both reports (see Sections 3.2 and 3.3)

13. work with the Metropolitan Waste and Resource Recovery Group and regional waste and resource recovery groups to provide better support to councils in rolling out food and garden organics collection services (see Section 5.6)

14. work with the Metropolitan Waste and Resource Recovery Group, councils and regional waste and resource recovery groups to establish a working group or community of practice to better collaborate and reduce inefficiencies in waste education (see Section 5.4).

We recommend that the Victorian Environment Protection Authority:

15. determine and prioritise key non-compliance and emerging waste risks for targeted action by:

- compiling and continually updating a publicly available inventory on waste stockpiles/dumps/storage of all waste operators—licensed, permitted or otherwise—detailing location, type of waste or resource, extent (tonnage/volume), responsible parties, action taken and outcomes (see Section 4.4)
- developing and implementing a prioritised action plan to clean-up or require the clean-up of identified waste risks (see Section 4.4)

16. prepare and implement a prioritised action plan to oversight the waste activities of licensed and permitted waste operators to ensure compliance with their licence or permit conditions, including on the quantity and manner of storage of waste and resources (see Section 4.4)
17. improve its monitoring and enforcement record management to allow a clear assessment of the effectiveness of its actions (see Section 4.4)
18. review and advise the Minister for Energy, Environment and Climate Change on the need to revise its existing regulatory instruments and regulatory processes against more stringent arrangements in other jurisdictions, including South Australia and New South Wales—for example on stockpile management, reporting on waste data, licensing of waste operators and tracking of hazardous wastes (see Section 4.4).

We recommend that the Metropolitan Waste and Resource Recovery Group:

19. review and revise the infrastructure capacity analysis in the *Metropolitan Waste and Resource and Recovery Implementation Plan* to plan and prepare for current and future waste infrastructure needs for metropolitan Melbourne (see Section 4.3)
20. develop and implement action plans to improve the recovery of resources from commercial and industrial waste (see Section 2.5)
21. expand its capacity-building initiatives to support councils in developing the skills of staff to plan and deliver waste services (see Section 5.5)
22. develop an evaluation and monitoring framework to effectively monitor, evaluate and report on progress and outcomes of its waste instruments, for example, the *Metropolitan Waste and Resource and Recovery Implementation Plan* and the *Commercial and Industrial Waste Strategy*, ensuring that each has targets based on sound evidence and assumptions, performance measures, and regular public reporting on individual action items and the objectives identified in waste instruments (see Section 2.3).

## Responses to recommendations

We have consulted with Banyule Council, Monash Council, DELWP, EPA, MWRRG and SV and we considered their views when reaching our audit conclusions. As required by section 16(3) of the *Audit Act 1994*, we gave a draft copy of this report to those agencies and asked for their submissions or comments. We also provided a copy of the report to the Department of Premier and Cabinet.

All four audited agencies have accepted the recommendations addressed to them. The audit did not address recommendations to the two audited councils. The full responses are included in Appendix A.



# 1

## Audit context

Victorian residents and businesses threw away some 12.9 million tonnes of waste in 2016–17. SV predicts that this waste will reach 20 million tonnes by 2046. Metropolitan Melbourne accounts for around 80 per cent of total state waste.

Councils and private waste operators manage rubbish and discarded materials through a network of collection and transportation services, and recovery, reprocessing and landfill facilities. Recovery is the separation of recyclables from waste destined for landfills. The government's role is to provide strategic direction, support and, where necessary, effective regulation.

Community participation in the recycling process is an important component of the state's waste system. To invest their time in separating bottles, papers and other recyclables, Victorians need confidence that these materials are properly recycled.

For the purposes of this report, 'waste' refers to all materials that consumers and business have discarded.

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### 1.1 Waste streams and material types

#### Waste streams

Waste is typically sourced from:

- MSW—household and some commercial waste collected at the kerbside by councils or their contractors
- C&I waste—commercial and industrial buildings collected mostly by private waste operators
- C&D waste—construction sites, collected by private operators.

Waste generated from these streams include glass, paper and cardboard, metal, plastic, tyres, FOGO, e-waste, and general rubbish. Some waste materials are hazardous in nature, including asbestos and chemical wastes from industries. EPA regulates the handling, storage, transport and disposal of these materials through the *Environment Protection (Industrial Waste Resource) Regulations 2009*.

## Waste material types

### Plastics

SV broadly groups plastic as either rigid or flexible. Rigid plastics are widely used in products such as bottles, containers, toys, pipes, and window frames. Flexible plastics are used for packaging film, plastic bags, shrink wrap, builder's film, and agricultural products such as silage wrap and wheat bags.

In 2016–17, the state recovered 131 000 tonnes of plastic—more than half of which came from MSW.

### Paper and cardboard

The main categories of value for reprocessing in Victoria are:

- cardboard and paper used for packaging (boxes)
- newspapers
- magazines
- printing and writing paper.

These items are used to manufacture recycled paper, packaging material and boxes. Material exported overseas is usually baled, compacted mixed paper.

According to available 2016–17 data, the Victorian waste and resource recovery system managed approximately two million tonnes of paper and cardboard. Of this, Victoria recovers 1.5 million tonnes, or approximately 75 per cent, with the remaining disposed of in landfill.

### Tyres

A tyre becomes a waste tyre when it can no longer be used for its original purpose. Every year, Australians generate 56 million waste tyres.

If not properly managed, waste tyres can cause significant environmental and public health risks. Whole tyres are flammable and pose a considerable fire hazard when stored together or stockpiled. If ignited, large volumes of waste tyres are difficult to extinguish and can have severe impacts on the air, soil, and water due to pollution. This can result in high economic costs and liabilities.

### Organic waste

Organic waste refers to any material that comes from a natural and biodegradable substance. It can be solid material such as timber and woody garden waste, food, or liquid waste such as grease trap waste or dairy effluent. It includes food waste from households, supermarkets, manufacturing, restaurants, and agricultural and effluent waste.

According to available data, organic waste makes up to 35 per cent of the total solid waste sent to landfill in Victoria. If not managed properly it has the potential to impact negatively on the community, environment and public health.

Available data indicates that food waste has the lowest recovery rate of all materials. According to the SWRRIP, the system currently manages nearly a million tonnes of food waste but in 2015–16 only 10 per cent was recovered:

- 67 per cent from the MSW sector (4 per cent recovered)
- 33 per cent from the C&I sector (23 per cent recovered)
- less than 1 per cent from the C&D sector.

### E-waste

E-waste includes televisions, computers, mobile phones, kitchen appliances and white goods. It is any product that uses an electric current to run. These items can contain valuable materials, such as gold, copper and platinum. E-waste can also contain highly hazardous materials.

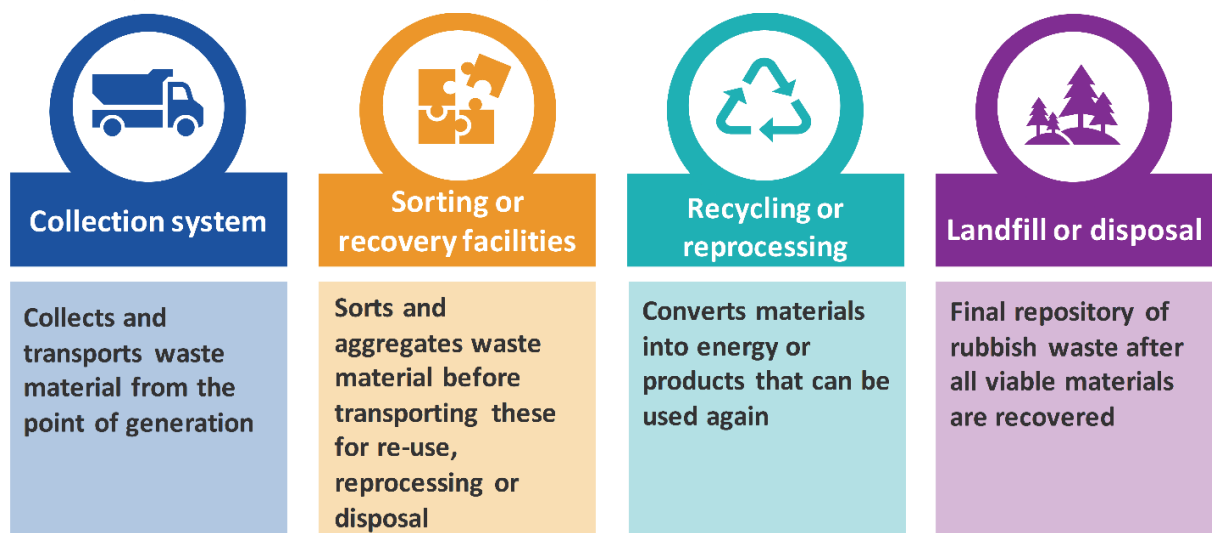
E-waste makes up only 1 per cent of waste currently going to landfill; however, it is one of the fastest-growing waste streams in Australia. E-waste from televisions and computers alone is expected to grow by over 60 per cent, or 85 000 tonnes, by 2024.

In late 2014, the government committed to banning e-waste from landfill to reduce harm to the environment and human health, and increase recovery of the resources in e-waste.

## 1.2 Waste infrastructure

The state's waste sector comprises operators that collect, sort, recycle, recover and dispose to landfill waste materials generated through the three waste streams. Figure 1A shows the infrastructure used to manage this waste.

**Figure 1A**  
**Four major groups of waste and resource recovery infrastructure**



Source: VAGO, from the SWRRIP.

According to SV, as at 1 June 2017 the state has more than 630 sorting, recycling and landfill infrastructure sites. Figure 1B provides a breakdown of these sites by region.

**Figure 1B**  
Number of waste infrastructures across Victoria

Region	Sorting or recovery facilities	Recycling or reprocessing facilities	Landfill or disposal infrastructure	Total
Metro Melbourne	69	69	18	156
Barwon South West	52	21	6	79
Gippsland	97	21	10	128
Goulburn Valley	41	22	5	68
Grampians Central	74	13	16	103
Loddon Mallee	47	8	13	68
North East	21	10	4	35
<b>TOTAL</b>	<b>401</b>	<b>164</b>	<b>72</b>	<b>637</b>

Source: VAGO, from the SWRRIP.

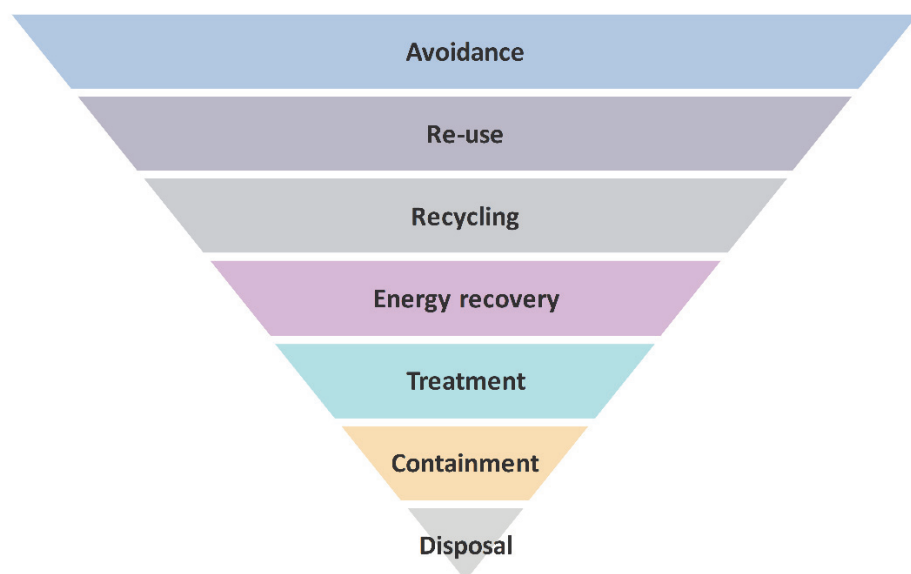
### 1.3 Legislation and policy

All Australian environment ministers endorsed the 2018 *National Waste Policy: Less waste, more resources*, which lays out the country's waste management and resource recovery direction to 2030.

#### *Environment Protection Act 1970*

The Act, which established EPA, is also the primary legislation that deals with Victorian waste management and resource recovery. It establishes a waste management hierarchy, which sets out an order of preference for how waste should be managed to help achieve the best possible environmental outcomes. This is shown in Figure 1C.

**Figure 1C**  
The waste hierarchy



Source: VAGO, from the Act, s.11

## Victorian Waste and Resource Recovery Planning Framework

The 2014 amendments to the Act established the Victorian Waste and Resource Recovery Infrastructure Planning Framework (the Framework). The Framework's objective is to ensure long-term strategic planning for waste and resource recovery infrastructure at state and regional levels through integrating needs, policy and statewide coordination. The Framework consists of:

- the SWRRIP
- regional waste and resource recovery implementation plans (RWRRIP)
- relevant ministerial guidelines.

## Victorian waste policy

In 2013 the then Victorian Government released *Getting Full Value* (GFV) as the overarching statewide waste policy. To deliver on its objectives, GFV mandated the development of the SWRRIP, RWRRIPs and several other waste strategic plans.

The current government did not endorse GFV as the state's waste policy when it came to office in 2014 and has not released a new policy. In 2018–19 the government approved a \$9.02 million funding allocation for DELWP to develop a whole-of-government waste policy that incorporates circular economy principles. DELWP advised us that this will be released in 2020.

## Statewide Waste and Resource Recovery Infrastructure Plan

Under the Act, SV must prepare the SWRRIP to provide strategic direction for the development and use of waste and resource recovery infrastructure for 30 years. SV published the first SWRRIP in 2015 and republished it in 2018 to incorporate the priorities and infrastructure analyses of the WRRIPs of the seven WRRGs.

The Act requires SV to review the SWRRIP at least once every five years. This must include an analysis and description of current and future waste and resource recovery sources, levels, and trends.

## Regional Waste and Resource Recovery Implementation Plans

RWRRIPs set out how the resource recovery infrastructure needs of the WRRGs will be met over at least a 10-year period. They align with the SWRRIP and describe how statewide infrastructure needs will be implemented at a regional level.

RWRRIPs must include an analysis and description of current and future waste and resource recovery sources, levels, and trends. RWRRIPs are also required to include an infrastructure schedule for their region and a description of how the long-term directions of the SWRRIP will be implemented locally.

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## 1.4 Roles and responsibilities

Maximising the recovery and reprocessing of resources from waste relies on goodwill from the community and the effective collaboration of the state government, responsible agencies, and councils. Clarity in roles and responsibilities is critical for effective and coordinated planning and implementation of the state's waste programs and activities.

### Department of Environment, Land, Water and Planning

DELWP is primarily responsible for:

- policy development
- leadership, coordination, and oversight of the waste portfolio
- working with other state and federal government departments
- oversight of the Sustainability Fund, including financial management and advice on expenditure.

### Sustainability Victoria

According to the *Sustainability Victoria Act 2005* and relevant waste strategies and plans, SV is responsible for:

- planning and facilitating the statewide management of waste
- developing and implementing strategies to foster sustainable markets for recovered resources and recycled materials
- developing tools to measure and report on government waste targets
- promoting waste avoidance, waste reduction and recovery, re-use, recycling of resources and best practices in waste management across the state
- preparing the SWRRIP and assisting in the preparation of RWRRIPs
- developing and implementing strategies, frameworks, projects, and programs to promote and facilitate the sustainable use of resources
- providing investment facilitation expertise and funding infrastructure development
- delivering statewide waste education and behaviour change campaigns
- developing and implementing a data management governance framework, including developing standards and guidelines to ensure consistency, accuracy and timeliness of the data collected to support decision-making and infrastructure planning.

## Victorian Environment Protection Authority

EPA is responsible for controlling pollution from waste through the development and enforcement of regulations and environmental standards. EPA also manages the collection of funds related to environmental regulation and enforcement, including the landfill levy.

## Regional waste and resource recovery groups

Regional WRRGs, including MWRRG, are responsible for:

- developing RWRRIPs for inclusion in the SWRRIP
- facilitating the procurement of waste services on behalf of member councils
- providing waste education, under SV's coordination and oversight
- delivering specific projects as funded by SV or other organisations.

## Councils

Councils provide a range of waste disposal and recycling services for their communities including:

- kerbside collection and disposal of general household garbage, hard rubbish, recyclables, and FOGO
- drop off for disposal and/or recycling of other specific types of items including metals, chemicals, oil, e-waste, paper, cardboard, garden organics and used printer cartridges
- operation of landfills for the disposal of waste
- commercial waste removal services in specific circumstances
- community education services about waste, resource recovery and litter.

## Other roles and responsibilities

Government waste and resource recovery instruments—including the VORRS and MDS—also allocate roles and responsibilities to relevant agencies and councils.

For example, the RISP identifies the lead agencies for specific responsibilities. Some of these are shown in Figure 1D.

**Figure 1D**

**Roles and responsibilities according to the RISP**

Responsibilities	Lead agencies
Support local government and industry to transition to new contract arrangements for recycling services	DELWP, SV
Improve contracting and procurement processes used by local government for recycling services	DELWP, MWRRG
Improve the collection of recycled materials	DELWP, SV
Drive demand for products containing recycled materials through government procurement	SV, Department of Treasury and Finance (DTF)

Source: VAGO, from the RISP.

## 1.5 Impact of the foreign export market

### Chinese Sword Policy

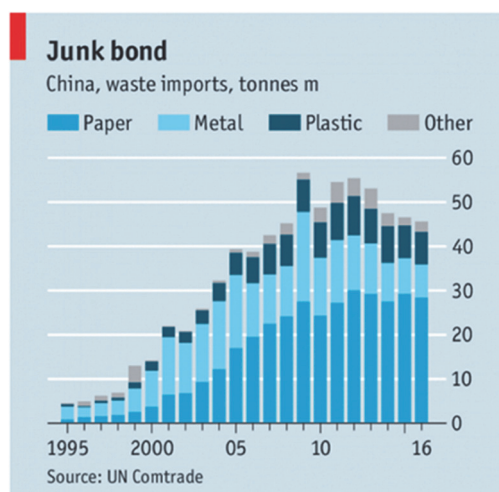
According to SV data, in 2016–17 Victoria exported three-quarters of recovered plastic and nearly half of recovered paper and cardboard for offshore reprocessing. A significant amount of Victoria's waste export—nearly all plastic exports and 75 per cent of paper exports—went to China.

China formally announced that it was restricting its waste imports in a notice to the World Trade Organization in July 2017, and the restrictions went into force at the start of 2018.

However, in 2013 China had already been working to block imports of low-quality recyclables under a crackdown referred to as the Operation Green Fence Policy. Customs officials increased their inspection of scrap plastic, paper, and metals to reject contaminated imports. Figure 1E shows that China's import of waste started decreasing in line with the implementation of the Operation Green Fence Policy.

**Figure 1E**

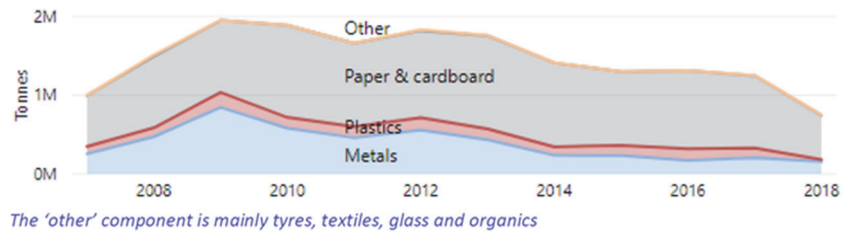
**China's waste imports**



Source: 'China tries to keep foreign rubbish out', *The Economist*, 3 August 2017, <https://www.economist.com/china/2017/08/03/china-tries-to-keep-foreign-rubbish-out>. Last accessed 23 March 2019.

Figure 1F shows that Australian exports to China started decreasing in 2013.

**Figure 1F**  
**Exports of waste materials for recycling by type from Australia to China, 2006–07 to 2017–18**



Source: National Waste Report 2018.

The Chinese Government's decision to stop importing low-quality or unsorted plastic and paper recyclables led to the significant decline of Australian waste exports to China across the second half of 2017 and into the first half of 2018. According to SV-commissioned research in 2018, Australian export of paper, cardboard and plastic to China fell from 71 per cent (98 300 tonnes of the 139 400 tonnes total Australian export) in January 2017 to 24 per cent (25 300 tonnes of the 107 100 tonnes total Australian export) by February 2018. SV had not yet released data on 2017–18 Victorian waste during the audit.

The same SV-commissioned research noted that international commodity prices for these materials declined significantly from:

- \$124 per tonne to \$0 per tonne for paper and cardboard
- \$325 per tonne to \$55 per tonne for plastic.

Figure 1G illustrates the time line of the Chinese Sword Policy.

**Figure 1G**  
**Time line of Chinese Sword Policy**



Source: VAGO.

Prior to the Chinese Sword Policy, many resource recovery facilities paid Victorian councils around \$60 per tonne of recyclables, which offset the cost of providing the service to ratepayers. Resource recovery facilities then sold these materials to China.

When China started significantly restricting its importation of scrap paper, plastics and metal, these private resource recovery facilities notified Victorian councils that instead of being paid for these materials, councils would need to start paying \$70 per tonne to have them collected.

Councils had little choice but to agree as the alternative would be to stop kerbside recycling services to Victorian households. The full impact of this contract revision varied from council to council but DELWP estimates it at about \$120 to \$150 per tonne on average.

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## 1.6 Why this audit is important

The Victorian waste sector is currently facing many challenges, in particular the closure of export markets for recyclables. Illegal dumping, large-scale stockpiling of recovered resources, and illicit storage of hazardous chemicals are increasingly exposing the Victorian community to health and environmental risks.

Our 2011 *Municipal Solid Waste Management* performance audit report found that contrary to the objectives of the then Victorian waste policy *Towards Zero Waste* (TZW), waste generation in Victoria continued to rise. The audit found that a lack of effective planning, leadership, coordination, and oversight from responsible agencies hindered the effective implementation of TZW. The audit's three recommendations were all accepted.

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## 1.7 What this audit examined and how

This audit examined whether responsible agencies are maximising the recovery and reprocessing of resources from Victoria's waste streams.

The audit reviewed the activities of DELWP, SV, EPA, MWRRG, and two metropolitan councils—Banyule Council and Monash Council.

We conducted our audit in accordance with section 15 of the *Audit Act 1994* and ASAE 3500 *Performance Engagements*. We complied with the independence and other relevant ethical requirements related to assurance engagements. The cost of this audit was \$540 000.

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## 1.8 Report structure

The remainder of this report is structured as follows:

- Part 2—Leadership for waste management
- Part 3—Understanding Victoria's waste data
- Part 4—Identifying and managing risks
- Part 5—Changing community behaviour.



# 2

## Leadership for waste management

As Victoria's population grows, so too does the volume of materials we discard. In 2016–17 available data suggests that Victoria generated 12.9 million tonnes of waste. SV predicts that by 2046 this will reach 20 million tonnes—an increase of 55 per cent.

An effective waste and resource recovery system is essential to manage Victoria's waste to minimise the impact on the environment. Achieving this requires leadership and clear policy direction to drive coordinated effort across both state and local governments and the engagement and cooperation of businesses, communities and individuals.

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### 2.1 Conclusion

DELWP's failure to fulfil its leadership role to ensure that the state operates under an overarching waste policy is depriving responsible government agencies and their stakeholders of a clear and definitive direction for waste management. This means that government responses to waste issues have been ad hoc and reactive.

In the absence of a statewide policy, agencies involved in waste management lack clear signals about what their priorities should be and how best to use their limited resources. DELWP's, SV's and MWRRG's six waste and resource recovery strategies and plans have myriad objectives and actions, which do not provide clear and coherent guidance in place of a statewide policy. Stakeholders, particularly some councils and waste operators, are confused about the roles and responsibilities of state-level agencies. Significant gaps in the waste instruments available lead to missed opportunities to improve waste management.

Further, DELWP, SV and MWRRG are not clearly and publicly reporting on the progress of the individual actions, overall objectives and outcomes of their strategies in a way that enables industry and the community to track their progress.

## 2.2 No statewide waste policy

Without a statewide waste policy, responsible agencies are operating in an uncertain environment and cannot effectively prioritise their limited time and resources.

GFV, which was published by the previous government in 2013, was the last statewide waste policy. DELWP advised us that after the 2014 election and change of government, GFV stopped being referred to as the state's waste policy. Some stakeholders and other relevant agencies we spoke to were not aware that, since 2014, GFV was no longer state policy.

The lack of a statewide policy since then has:

- caused frustration among relevant state agencies and local governments, making it more challenging to make decisions on which interventions to prioritise
- added to the confusion among councils and industry about the roles and responsibilities of SV and DELWP
- limited agency action in areas such as WtE—a clear policy would provide greater clarity and direction for EPA, MWRRG, councils, and industry in planning for WtE facilities.

DELWP advised that the 2017–18 Budget was the first opportunity it had to seek resourcing to address the policy gap. Although unsuccessful, a bid put forward for the 2017–18 Budget identified stakeholder concerns about the lack of a coherent overarching policy increasing business uncertainty.

State government policy is a critical tool that drives both public and private investment priorities. EPA and MWRRG informed us that economies of scale and the ability to sustain reliable markets for recovered waste materials requires predictable policy settings and investment certainty.

The 2018–19 Budget allocated \$9.02 million for DELWP to create an evidence-based, whole-of-government waste policy and action plan to 2030 that incorporates circular economy principles and includes the government's position on WtE. DELWP advised us that it is working to finalise the policy by 2020. DELWP has developed a draft issues paper that it expects to release to the public as the first part of the policy's development.

### Unclear roles and responsibilities

Despite changes arising from the recommendations of our 2011 report, *Municipal Solid Waste Management*, and the MAC Review, roles and responsibilities in the waste and resource recovery sector remain unclear.

DELWP has worked to improve the understanding of state agency roles and responsibilities through the establishment of the Waste and Resource Recovery Project Control Board (WRR PCB).

The **WRR PCB** oversees the development and delivery of policy, programs and projects in waste and resource recovery. It is made up of DELWP, SV, EPA and WRRGs.

In 2015, through this forum, state agencies agreed on and documented their roles and responsibilities. However, in mid-2018 DELWP surveyed portfolio members to understand constituents' thoughts on the clarity of roles and responsibilities. The survey identified that there was residual ambiguity and a need for further clarity around the roles and responsibilities of each organisation. DELWP addressed these areas of ambiguity in its 2019 Waste and Resource Recovery Portfolio Collaboration Framework.

However, external stakeholders we spoke to through our audit consultation continue to find roles and responsibilities of key agencies confusing. This indicates that efforts to provide a greater understanding of the roles and responsibilities at a state agency level have failed to filter down to councils and industry.

The considerable number of disparate waste instruments that provide for agency tasks and functions adds to the confusion. For example, the RISP tasks SV and DELWP to assess different options to improve the collection of recycled materials. This is a specific function that has not been previously spelled out either in legislation or other waste instruments.

DELWP needs to clarify and set out in one document the roles and responsibilities of each agency responsible for waste management. In doing this, DELWP also needs to determine whether SV, MWRRG, EPA, and itself, have sufficient resources to undertake all the designated roles and responsibilities.

## 2.3 Unclear statewide guidance

SV developed the SWRRIP and MWRRG developed the MWRRIP in line with legislative requirements. Collectively, however, the six strategies and plans do not provide clear and coherent guidance on required or priority activities.

Figure 2A lists the six statewide waste strategies guiding the waste and resource recovery sector in metropolitan Melbourne. These identify 23 goals or objectives, 23 strategic directions and 103 actions.

**Figure 2A**  
**Content of waste and resource recovery strategies**

Instruments	Responsible agency	Number of goals/objectives	Number of strategic directions	Number of actions
SWRRIP	SV	4	6	20
MWRRIP	MWRRG	4	N/A	13
VORRS	SV	4	4	14
MDS	SV	7	7	N/A (in business plan)
WES	SV	N/A	6	45
RISP	DELWP	4	N/A	11
<b>Total</b>		<b>23</b>	<b>23</b>	<b>103</b>

Source: VAGO, from SV for the SWRRIP, MWRRIP, VORRS, MDS and WES and DELWP for the RISP.

There are also key gaps in these strategies and plans, as shown in Figure 2B.

**Figure 2B**  
**Waste and resource recovery strategies**

Strategies and plans	Responsible agency	Implementation plan	Lead agency identified for each action	Time lines	KPIs	Public reporting
SWRRIP	SV	x	✓	✓	✓	✓
MWRRIP	MWRRG	✓	✓	✓	✓	x
VORRS	SV	x	x	x	x	x
MDS	SV	x	x	x	x	x
WES	SV	x	x	x	x	x
RISP	DELWP	✓	✓	✓	✓	x
<b>Total (✓/x)</b>		<b>2/6</b>	<b>3/6</b>	<b>3/6</b>	<b>3/6</b>	<b>1/6</b>

Source: VAGO, from SV for the SWRRIP, MWRRIP, VORRS, MDS and WES and DELWP for the RISP.

## Statewide Waste and Resource Recovery Infrastructure Plan—quasi-statewide policy

In the absence of a statewide waste policy, some councils and stakeholders have incorrectly considered the SWRRIP as Victoria's waste policy. This confuses the purpose of the SWRRIP, which is to provide a 30-year plan for the state's recovery, reprocessing and landfill infrastructure. The previous government designed the SWRRIP to be one of four key strategies and plans—including the MDS, VORRS and WES—to underpin the implementation of its overarching statewide waste policy, GFV.

This confusion has led Monash Council and some other stakeholders consulted during the audit to believe that SV and not DELWP is responsible for developing the statewide policy.

### 2.4 Limited implementation of statewide strategies

SV is not effectively implementing its four strategies guiding the waste and resource recovery sector in Victoria to ensure waste to landfill is minimised. The SWRRIP is a 30-year strategy, the MDS and WES have a 10-year outlook, and the VORRS is a five-year action plan. Despite this, three years since their publication, SV does not have a clear plan to implement them. In particular, SV's limited and ineffective implementation of the VORRS is a missed opportunity to improve the recovery rate of organic material by 2020.

### No implementation plans

SV's SWRRIP, VORRS, WES and MDS include some vague actions and do not provide specific guidance on how to achieve identified objectives. Actions indicated often have multiple projects sitting underneath them, but no implementation plan. This makes it difficult to determine the activities required to achieve identified objectives.

In contrast, each action included in the RISP is accompanied by a more detailed implementation description that identifies the expected outcome or target, time lines and lead agency.

SV developed the *2015–16 Delivery Plan* for the SWRRIP, which includes a three-year activities table that SV updates annually. ‘Activities’ are defined in the delivery plan as projects, programs and initiatives that are being undertaken by portfolio partners to deliver SWRRIP actions. For example, MWRRG is providing workshops, training and guidance to councils to improve their waste and resource recovery strategies. However, the activities table does not provide a detailed enough description of what needs to occur for responsible agencies to implement each action and for SV to implement the overall strategy.

### No targets or performance measures

The SWRRIP is a 30-year strategy but does not identify any targets or immediate, intermediate or end measures for outputs or outcomes. This makes it difficult to understand how SV will determine and report on its progress. The VORRS, WES and MDS do not have targets, performance measures or specific requirements for the frequency of reporting.

### Limited monitoring and reporting

Transparent public reporting on government performance is an important way to build and maintain public trust. This is particularly relevant given the importance of community involvement in minimising and recycling waste.

DELWP, SV and MWRRG publicly report on the completion of individual projects and programs within their strategies and plans in their annual reports. However, they are not clearly, transparently and publicly reporting on the progress of the actions, overall objectives and outcomes of their strategies in a way that enables industry and the community to track their progress or understand their impact.

#### SWRRIP reporting

SV monitors progress of the SWRRIP actions through its Evaluation Report and reports this to the WRR PCB annually. It raises project or activity status, risks and issues on an as needs basis through the WRR PCB.

SV does not have similar reporting for the VORRS, WES or MDS but rates their overall progress in the SWRRIP Evaluation Report. The assessments are imprecise, and the evidence base of the ratings is not clear given the lack of regular monitoring and reporting on actions in these strategies. SV only provides this full evaluation report to portfolio members, it does not report it publicly.

SV has released a progress report on the SWRRIP for 2015–17 and 2016–18, but these do not include an assessment of whether identified objectives are being achieved. These progress reports do not communicate clear outcomes to the Victorian community. Instead, they summarise key outputs and monitor performance indicators using self-reported surveys. SV does not clearly link activity reporting and performance measures with SWRRIP goals or collect primary data against the indicators.

### Limited and delayed funding

EPA is responsible for collecting the Municipal and Industrial Landfill Levy (MILL) under the Act. EPA collects the MILL from licensed landfill operators, councils or commercial operators, and transfers it to the MILL Trust Account, managed by DELWP.

SV, EPA and the seven WRRGs receive core funding allocations from the MILL Trust Account through an annual ministerial determination. DELWP transfers the remaining balance to the Sustainability Fund. SV and MWRRG source project and program funding through the Sustainability Fund. Funding for each project and conditions and accountability requirements are specified in funding agreements with the recipients.

Since 2017–18, the government has allocated SV \$785 000 from the Sustainability Fund to deliver the VORRS, \$8.31 million to deliver the WES and related education programs and \$6.42 million to deliver the MDS. This forms part of the \$78.7 million the government allocated in 2017–18 from the Sustainability Fund to deliver waste and resource recovery programs.

SV advised that these allocations are not sufficient to fully implement these strategies. We note that as at 30 June 2018, the balance of the Sustainability Fund was \$511.3 million. The Act provides for this funding to be used for best practices in waste management.

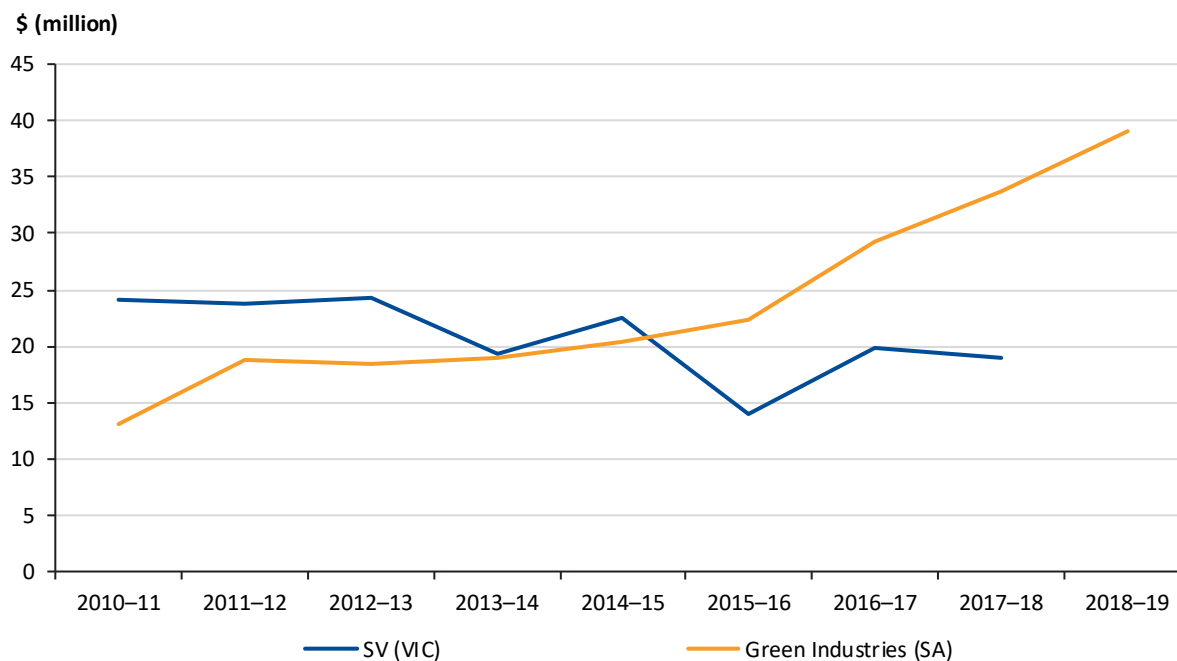
SV could have provided more detailed advice to government specifying and costing out all the remaining action items when seeking funding to deliver the strategies.

### Other jurisdictions

Victoria spends less than other jurisdictions on waste and resource recovery despite Victoria managing much higher volumes of waste. In 2016–17, available data suggests that Victoria generated 12.9 million tonnes of waste and SA produced just over 4 million tonnes of waste. Yet in 2016–17 Green Industries—SA's agency responsible for waste and resource efficiency—received almost \$10 million more in funding. This is because in SA, the *Green Industries SA Act 2004*, legislated that Green Industries SA receive 50 per cent of the waste levy income.

Figure 2C compares the funding of Green Industries SA and SV from 2010–11 to 2018–19. Proportional to waste generated, Green Industries SA receives a substantial amount more in funding allocations than SV.

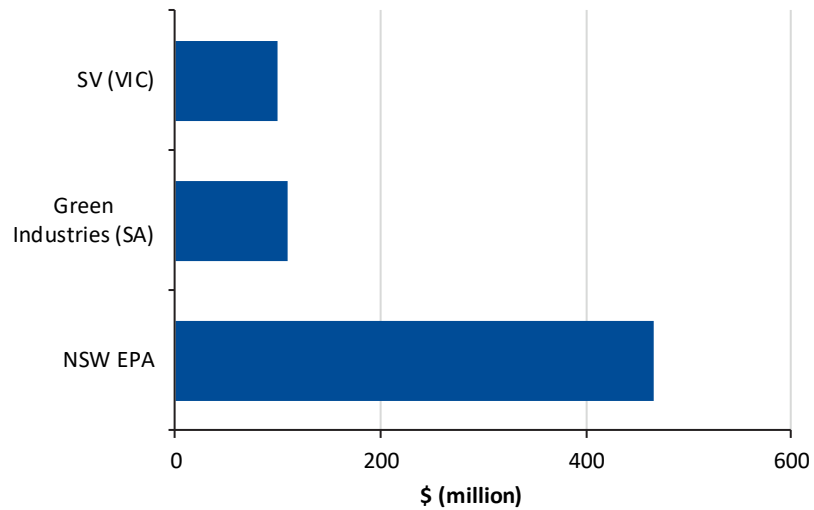
**Figure 2C**  
**Funding comparison of SV and Green Industries SA from 2010–11 to 2018–19**



Source: VAGO, based on Green Industries SA annual reports and SV documentation.

Further, Green Industries SA is concerned solely with waste issues, while SV also delivers programs on climate change and resource efficiency. In addition to its core funding, SV also receives program-specific funding through the Sustainability Fund. In 2017–18, SV received \$9.86 million in specific program funding. From 2012–13 to 2016–17, NSW EPA received \$465.7 million to deliver the NSW government's Waste Less, Recycle More initiative. From 1 July 2017, Waste Less, Recycle More received a further \$337 million in funding to 2021. Figure 2D shows the funding comparison between NSW, SA and Victoria from 2012–13 to 2016–17.

**Figure 2D**  
**Funding comparison of NSW EPA, Green Industries SA and SV from 2012–13 to 2016–17**



Source: VAGO.

## 2.5 Gaps in statewide guidance

Current waste plans, strategies, policies and regulations do not give sufficient—or in some instances any—policy direction or guidance on:

- waste avoidance
- hazardous waste
- planning decisions
- MUDs
- WtE
- C&I waste.

### Waste avoidance

While the current waste strategies and plans refer to the waste hierarchy and mention waste avoidance, none focus directly on improving waste avoidance practices. Waste avoidance is discussed in more detail in Section 5.2.

### Hazardous waste and prescribed industrial waste

The SWRRIP does not include planning for hazardous waste infrastructure. SV acknowledges this gap and has stated that this will be included in the next iteration of the SWRRIP expected in 2023.

The objective of the **Victorian Planning Policy Framework, clause 19.03-5S** is to reduce waste and maximise resource recovery so as to reduce reliance on landfills and minimise environmental, community amenity and public health impacts.

## Planning decisions

The SWRRIP contains a goal to protect 22 sites or 'hubs' that contain the state's key pieces of waste and resource recovery infrastructure. To implement this goal, DELWP revised the *Victorian Planning Policy Framework, clause 19.03-5S Waste and Resource Recovery*, to include the 2015 SWRRIP as a relevant policy document to help protect these hubs in land use planning decisions.

However, the SWRRIP does not sufficiently guide planning decisions to ensure waste and resource recovery hubs are protected. In November 2018, SV's Hubs of State Importance Risk Register rated 13 out of 22 hubs as high risk—which SV defines as 'many conflicting issues currently exist that are problematic to resolve'—and 10 out of 22 at risk of encroachment.

The SWRRIP includes decision-making guidance for planners but it is not specific enough to protect the waste and resource recovery sites SV identifies as having state importance. SV provided us with nine examples where their interventions led to land use planning decisions made in line with, and with reference to, the SWRRIP. This illustrates the need for the decision-making guidance and other tools to be more accessible, specific, and user-friendly for land use planners.

In addition, DELWP is currently reviewing how the planning system can better manage buffers between industries and sensitive uses—such as those protecting the waste and resource recovery hubs—as currently, approaches can vary, be complex and lead to inconsistent decision making.

## Multi-unit developments

Despite all audited agencies identifying MUDs as a growing issue for waste and resource recovery management—particularly for metropolitan Melbourne—there is limited guidance or direction for this issue. Compared to single dwellings, MUDs have lower resource recovery rates and higher contamination rates. As a growing number of Victorians live in MUDs—particularly in metropolitan Melbourne—DELWP, SV, MWRRG and councils need to introduce measures aimed at improving recovery rates in MUDs to minimise waste going to landfill.

### Commercial not council collection services

Council kerbside waste collection is not available to most MUDs due to:

- insufficient kerbside space to present the bins for all MUD residents (for example, smaller MUDs such as townhouses with narrow street frontage)
- the waste collection infrastructure needed to manage a large multistorey building not being compatible with the collection equipment owned and operated by a council
- councils avoiding entry to private property to collect waste because they consider the liability risk too high.

As a result, MUDs engage private operators to collect their waste. As councils do not provide the collection services they have limited influence over the type of collection services offered by private operators.

A **planning scheme** is a statutory document that sets out objectives, policies and provision for the use, development and protection of land in the area to which it applies.

## Design guidance

Although councils can influence the design of MUDs' waste infrastructure through the planning process, until recently there was limited consistent guidance in the planning system. In 2016, DELWP incorporated the *Better Apartment Design Standards* (the Standards) into the Planning Scheme. These require MUDs to plan for the collection of waste into three streams—landfill, recyclables and organics, in accordance with SV guidelines. While this is a positive change, more integrated responses across the responsible agencies are needed. Council planners, however, base their decisions on their interpretation of the Standards—which are not prescriptive—and so their application varies between councils.

In 2018, SV released an updated *Better practice guide for waste management and recycling in multi-unit developments*, which includes specific guidance to ensure that building design includes space for multiple waste bins and collection vehicle access. DELWP advised that it is updating the Standards, Victorian Planning Provisions and all planning schemes to reflect the SV better practice guidance. While this is a step in the right direction, it is not yet clear whether these actions will provide planners with sufficient guidance and support. DELWP could achieve better clarity through citing specific guidelines in the planning clauses and including critical performance measures directly in the planning provision, rather than relying on SV guidelines.

Notwithstanding this, neither the Standards nor the *Apartment Design Guidelines* apply to MUDs approved before 2016. Responsible agencies advised they are now considering how to address waste issues for these MUDs and those that were approved after 2016 but are non-compliant with the Standards.

Noting that planners sometimes lack the required technical knowledge to assess whether planning applications are compliant with the Standards, MWRRG developed the 2017 *Improving resource recovery in multi-unit developments toolkit* (MUDS toolkit) to help local councils adopt and implement MUD waste management planning considerations. A broader review of the support available to Victorian councils will help enhance the skill base of council planners.

Monash Council has developed guidelines for MUDs to provide for better-practice waste management design features. In addition, Monash Council staff have attended MWRRG's Better Practice Guide for Waste Management and Recycling in MUDs training. Monash Council's *Waste Management Strategy 2017–2027* also makes recommendations about MUDs such as to increase resource recovery.

Banyule Council's Waste Management Team advised us it is applying the Standards to MUD proposals. Since the audit, Banyule Council has implemented a process to ensure that council planners refer MUD applications—for three or more units—to council's waste team for review and assessment. Among other requirements, the assessment process asks applicants to submit Waste Management Plans that provide for the separate collection of garbage, commingled recyclables, and food and garden organics.

## Collection services

There is currently no requirement for MUDs to offer comingled recyclables and organics recycling services. Consequently, most MUDs have only one waste collection service—for waste going to landfill. As the number of MUDs increases, overall recovery rates are likely to decrease.

The 2016 MWRRIP set a target that at least 95 per cent of all new MUDs in metropolitan Melbourne will accommodate resource recovery collections by 2026. DELWP also included this target in *Plan Melbourne 2017–2050*.

However, neither DELWP nor MWRRG has reported on how they are tracking to meet the 95 per cent target. DELWP advised that MWRRG is working with councils to gather this information as they approve planning applications. MWRRG advised that it will use SV's VLGAWSR to review council waste standards for MUDs and may also undertake a random sample audit of waste management plans of new MUD applications.

No similar target is in place to maximise resource recovery collections in MUDs built before 2016.

## Waste to energy

The Act's waste management hierarchy identifies the transformation of WtE as the fourth preferred option, higher than treatment, containment or disposal to landfill. Despite this, there is currently no WtE policy to guide government agencies and potential investors on what WtE technologies are acceptable and how they should implement them in Victoria. However, EPA has developed an *Energy from waste* guideline.

In 2017, DELWP released a discussion paper to inform the government's position and policy on WtE technologies. The discussion paper indicated that a policy would be released in early 2018. Following the consultation process, however, the government has not released a WtE policy. DELWP and SV advised that the government decided to consider the role of WtE as part of the circular economy policy to be released in 2020.

DELWP documentation notes that SV receives some 50 enquiries a year on potential WtE investments. A WtE policy could provide a stable environment for government to attract more investment and enable better and more effective long-term planning.

One of MWRRG's important roles is to assist metropolitan councils to maximise resource recovery. In October 2018 MWRRG completed a business case for advanced waste processing infrastructure to reprocess south-east Melbourne councils' kerbside waste more efficiently instead of sending it straight to landfill. MWRRG is currently assisting these councils to collect market information on potential and available waste reprocessing options.

While MWRRG's proactive work to secure a market for metropolitan Melbourne's waste resources is commendable, there is a risk that the technology it chooses may not be in line with the yet-to-be-developed state WtE policy. MWRRG advised us that it is not pushing for a specific technology. It is approaching the market in a technology neutral way and placing the onus on bidders to demonstrate how proposed solutions will address councils' desired performance standards and service outcomes.

## Commercial and industrial waste

Unlike MSW, the collection of most C&I waste is organised through contracts between businesses and private waste collectors. Sending C&I waste to a landfill remains a relatively low cost for business, and as a result, many businesses chose to send recyclables to landfill rather than recycling them.

To date, government has had minimal intervention in the management of C&I waste to ensure that its recovery is maximised. Current waste strategies and plans give limited guidance and direction on increasing the recovery of recyclables from C&I waste. SV advised that the current suite of strategies focus on the recovery of target materials regardless of their origin but acknowledge the limited effort to increase the diversion of C&I recyclables from waste going to landfill.

According to the 2018 SWRRIP, the state produced 4.4 million tonnes of C&I waste—more than double that produced by Victorian households.

Prior to 2013, WRRGs only had responsibility for MSW. However, the 2013 MAC Review recommended that the responsibilities of WRRGs be expanded to include C&I and C&D. Despite the government accepting the recommendation, MWRRG was not given additional ongoing funding to support its increased responsibilities. In 2014 MWRRG received a one-off payment of \$300 000 to cover its additional responsibilities—such as a bigger coverage area, to include the Mornington Peninsula—but this funding was not specific to C&I and C&D.

In June 2018, MWRRG released its C&I strategy under the direction of MWRRIP. It includes a three-year action plan and identifies two priority C&I waste materials—food waste and plastics waste—for increased diversion from landfill. MWRRG chose these two problematic waste materials based on 2014 data because the C&I sector:

- sent all but 3 per cent of 248 000 tonnes of food waste to landfill
- recovered only 37 per cent of the 218 000 tonnes of plastics waste.

In 2017–18, MWRRG reallocated \$226 000 from its core funding to deliver the C&I strategy. In the absence of new government funding, MWRRG has reallocated existing core funding to support actions to increase the recovery rates from C&I waste. The limited available funding impedes MWRRG's ability to provide effective guidance on C&I waste management. More needs to be done to encourage and promote better practice waste management among businesses and industry.

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## 2.6 Council waste plans

Banyule Council, Monash Council and MWRRG are effectively fulfilling their roles in delivering waste resource and recovery services. Council waste plans include targets and time lines, and both councils are working with MWRRG to achieve cost efficiencies in their procurement contracts for waste services, including organics processing and landfill services.

Both councils have managed to provide continued waste services to their communities in spite of the challenges brought about by the Chinese Sword Policy. This is due in part to the continued ability of their contracted resource recovery facility operator—both councils use the same operator—to process councils' recyclables. Both councils are also taking steps to ensure that their waste services to their communities remain undisrupted.

### Banyule Council

Banyule Council's *Toward Zero Waste Management Plan 2019–23* (TZWMP) provides effective guidance on council activities and includes clear actions, measures and priorities in the action plan attached. The action plan contains 32 actions relating to the four strategic directions in the TZWMP. As with its previous waste management plan, *Banyule Waste Management Plan 2015–19*, Banyule Council reports to the community on progress of these actions in its annual reports.

The TZWMP aims to assist Banyule Council to achieve its target of zero waste to landfill, or 100 per cent recovery rate, by 2030. Currently, Banyule Council's recovery rate is at 52 per cent. The TZWMP explains that achieving the 100 per cent recovery rate is an aspirational target that requires council and the community to work together to rethink their purchase and use of materials—avoiding waste, repairing and reusing items. For the four-year period 2018–19 to 2022–23, the TZWMP focuses on the diversion of FOGO and aims to increase Banyule Council's recovery rate to 64 per cent by 2023.

Banyule Council reviews its waste management plans every four years, and in developing the TZWMP, it considered its achievements and learnings from the 2015–19 plan, along with the results of its community consultation and new legislative requirements, such as the e-waste Policy.

In 2018, Banyule residents gave Banyule Council's waste management services, which includes recycling services, its highest satisfaction rating. Nearly 80 per cent of residents rated council's performance as either good or very good, with 11 per cent of residents noting that waste management is one of the best things about living in Banyule. Residents considered waste management as the most important council responsibility.

### Monash Council

Monash Council's *Waste Management Strategy 2017–27* provides clear guidance on council's activities. It includes 31 actions relating to the five key goals of the strategy. It also includes clear targets relating to waste and resource recovery for 2022 and 2027.

Monash Council advised that it developed its strategy's targets by determining and projecting the impact of relevant council activities on identified objectives. For example, Monash Council's key objective for the strategy is to reduce waste to landfill. Monash Council identified that its FOGO project will help achieve this objective. Using data from its bin audits and landfilled waste, Monash Council decided that it will work towards increasing its recovery rate from 50 per cent to 60 per cent by 2022.

Monash Council uses a reporting software tool to track and report on the progress of its waste activities relative to strategy objectives. It uses this reporting tool for its regular quarterly internal reporting to senior management, and yearly public reporting in its annual reports.

In 2018, Monash residents gave Monash Council the highest performance satisfaction rating for waste and recycling services. These include regular garbage collection, green waste collection, regular collection of recyclables and hard rubbish collection. Residents also rated these services as Council's most important services to the community.

# 3

## Understanding Victoria's waste data

Government's planning and policy decisions need to be informed by reliable waste data.

While waste data collection is a shared responsibility among SV, EPA, councils and WRRGs, SV is responsible for the statewide oversight, coordination and reporting of waste data. SV provides two performance reports relating to waste—VLGAWSR and the *Victorian Recycling Industry Annual Report* (VRIAR).

These reports use data collected mainly through voluntary surveys of councils and reprocessing facility operators. SV also uses EPA's landfill levy data—collected through mandatory landfill levy returns—and the Australian Bureau of Statistics' population and export data.

Timely and standardised data collection processes as well as effective data verification processes will help ensure the completeness and accuracy of collected and reported waste data information.

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### 3.1 Conclusion

SV-reported Victorian waste data is incomplete, unreliable and, in some instances, clearly inaccurate—particularly the recycled portion of Victorian households' recyclables.

SV provides limited guidance to ensure consistent and standardised data collection processes and is unable to effectively validate waste information it receives from councils and recovery facility operators.

Data quality issues limit the government's ability to comprehend the nature and magnitude of the state's waste, understand what becomes of collected recyclables, and identify emerging risks. These data quality issues impact the government's ability to make well informed investment and planning decisions or develop policy settings to address current and future risks and needs.

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### 3.2 Inaccurate reporting—recycling

SV's reporting on recycled waste materials is inaccurate and suggests outcomes that are better than what the underlying data indicates.

For example, the 2016–17 VLGAWSR initially published by SV in September 2018 stated that 94 per cent of collected recyclables 'were recycled'. The 2013–14 and 2015–16, VLGAWSRs said that respectively 94 and 95 per cent of collected recyclables were 'actually recycled'.

These percentages suggest that nearly all recyclables collected from Victorian households were recycled as intended. This is not the case.

The word 'recycled' as used in SV's reports does not refer to its plain English meaning of conversion to a reusable item or used again. Neither is it consistent with:

- AS/NZS 3831:1998 definition of recycled material as 'material recovered and manufactured into products'
- National Waste Report definition of recycling as 'activities in which solid wastes are collected, sorted, processed (including through composting), and converted into raw materials to be used in the production of new products'.

Instead of saying, '94 per cent of collected recyclables were recycled', SV acknowledged during the audit that what it should report is that '94 per cent of collected recyclables were sent for recycling', which conveys a very different meaning to government and the public.

SV advised us that following this audit finding, it has now corrected the online version of the 2016–17 VLGAWSR report by removing the reference to recycling 94 per cent of collected recyclables. SV should similarly correct previous versions of the VLGAWSRs.

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### 3.3 Data quality issues

**Recovery rate** is the proportion of recovered resources to total waste generated.

Victorian waste data, as reported in the VLGAWSR and the VRIAR, is incomplete and unreliable. Current state waste data excludes information about the movement of recovered or illegally dumped recyclables and waste materials, the nature and extent of stockpiles across the state, and the level of market demand for Victorian recyclables.

This means, among other things, that government has limited understanding of:

- the type and amount of recovered resources that are in fact recycled
- whether the unchanged state recovery rate of 67 per cent from 2012–13 to 2016–17 is accurate and whether it is due to improved resource recovery or other reasons such as unaccounted waste stockpiling or illegal dumping.

The Taskforce—established to identify and address waste stockpiles across the state—has also questioned the accuracy of Victorian waste exports data as reported in SV's VRIAR reports. The Taskforce believes waste exports data has been significantly underestimated. Figure 3A shows VAGO's assessment of the relative quality of Victorian waste data.

**Figure 3A**  
**Quality of Victorian waste data**

Waste information	MSW	C&I waste	C&D waste
Landfilled	4	4	4
Segregated for recycling	3	2	2
Recycled	1 <sup>(a)(b)</sup>	1	1
Received from interstate, exported <sup>(b)</sup> , stockpiled, illegally dumped	1	1	1

(a) SV VLGAWSR states that nearly all recyclables collected from council kerbsides are recycled.

(b) Publicly reported.

Note: Legend:

Assessment	Description
5 = STRONG	Complete, reliable, verified data. Measures actual data. If not actual data, i.e. based on survey, respondents use a standardised method to collect and report data. Publicly reported.
4 = GOOD	Based on mandatory returns collected by EPA. Actual data collected quarterly but is incomplete. Data is not collected for landfilled waste that is exempt from levy. Moreover, collected data on hazardous waste is not publicly reported. Does not distinguish between C&I and C&D waste—estimated using a 60:40 split.
3 = SOMEWHAT GOOD	Based on voluntary survey. High response rate, usually 100 per cent. Strength of response depends on councils' varied processes to determine relevant data. Data collected annually. SV has very limited ability to confirm accuracy of data provided.
2 = NOT GOOD	Based on voluntary survey of waste recovery and reprocessing facilities. Response rate fluctuates—usually lower than 90 per cent. Data collected annually. Incomplete. Responses do not provide answers to many survey questions. SV has very limited ability to verify data provided.
1 = THERE IS SOME DATA	SV collects nil to little data. Not publicly reported. Based on voluntary surveys. Sighted raw data shows least responses for these categories. SV has no ability to verify provided data. Not publicly reported (except export waste data).

Source: VAGO.

## Incomplete data

EPA collects actual landfill levy data from licensed landfills and some waste information from other licensed facilities. SV obtains waste data through annual voluntary surveys. From time to time, SV also commissions industry research on particular waste streams.

### Waste sent to landfill

EPA's landfill data obtained from mandatory landfill levy returns is the only actual or primary waste data that is collected and aggregated at statewide level.

However, SV's reporting of Victoria's waste data is incomplete because it does not cover all waste sent to landfill such as:

- prescribed industrial waste (collected by EPA but not included in SV reporting)
- waste material that is exempt from the payment of the levy, such as waste from a natural disaster and those cleaned up in emergency events such as bushfire or flood (data not collected by EPA)
- waste sent to landfills that are not subject to the levy under section 50S of the Act:
  - 'any privately owned landfill that only receives wastes that consist of substances that were owned by the owner of the landfill before they became wastes' (data not collected by EPA)
  - 'any landfill that only receives the municipal wastes of an area with a population of less than 5 000 people and that is owned by a municipal council' (data not collected by EPA).

### Other waste categories (not including landfilled waste)

There is currently no government requirement to track or monitor the flow of materials segregated for recycling after these are sent to recovery or reprocessing facilities.

SV collects these datasets through voluntary surveys of councils and waste reprocessing operators. The respondents' willingness to respond and their ability to provide accurate data on the extent of their waste activities affect the completeness and reliability of responses collected.

The response rate for councils is high with all 79 councils responding to the 2015–16 and 2016–17 surveys. The survey participation rate is lower for waste recovery and reprocessing operators at approximately 85 per cent for the 2015–16 and 2016–17 surveys. The resource recovery operator responsible for collecting half of Victorian households' kerbside recyclables was not a respondent to the 2014–15, 2015–16 and 2016–17 VRIAR surveys of waste operators. Waste recovery and reprocessing operators do not provide answers to all questions, particularly those referring to tonnage of resources recycled, stockpiled, received from interstate, and landfilled.

### Data collection methods not standardised

Councils have varied methods of collecting waste data requested in SV surveys. While some councils use weighbridge measurements or data received from contractors through their finance systems, SV documentation and our stakeholder consultation indicate that some councils use less-accurate truck counts or 'eye-balling' (visual) estimates to answer the survey questions.

Although SV provides guidance to councils and waste operators on how to respond to its annual waste surveys, SV currently does not guide councils to standardise and improve the quality and consistency of their waste data collection.

In 2012, the then Association of Victorian Regional Waste Management Groups developed the Data and Reporting Guideline for Waste Management Facilities (the Guideline) to standardise waste data collection. However, SV documentation reveals that it needs to revise the Guideline as it is not consistent with the latest National Waste Guidelines.

SV documentation also reveals that waste portfolio agencies consider standardised waste data collection as a key issue for the sector, and the Guideline, when it is revised, as a solution to data collection inconsistencies. The Waste Data Working Group, which SV chairs, has identified the revision of the Guidelines as a priority action. Notwithstanding, SV is yet to action it.

Unless councils and waste operators adhere to a standardised method to collect waste data, there will be limited assurance that the data they provide to SV fairly and consistently represents their waste information.

Additionally, as kerbside recyclables are collected and transported as commingled waste materials—plastics, glass, paper and steel—councils do not have specific weight tonnages for each material. Councils rely on estimates provided by their contracted waste operator for this information. SV advised that councils and WRRGs should consider requiring waste operators to provide specific waste data information, including on the final destination of segregated recyclables, as part of recycling contracts.

Waste recovery operators are also unable to provide specific weight tonnages for the various sources of recovered resources—MSW, C&I and C&D waste. This means that SV estimates waste tonnage from the three sources rather than report actual figures.

### Limited data quality assurance processes

SV has a limited ability to verify the responses it receives from the voluntary surveys.

While SV tries to validate the waste data it receives from respondents, its process to do this focuses on identifying significant changes in data from year to year. It does not request raw data or check respondents' data collection processes or controls.

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### 3.4 Addressing data quality issues

SV has been aware of data quality issues for at least 15 years, particularly regarding the reliability and completeness of MSW waste data. TZW, the Victorian Government's 2004 waste strategy document, tasked SV to improve the quality of waste data collection, management and reporting.

In response, SV has developed the Waste Data Governance Framework and established a waste data portal for sharing waste information across relevant agencies. However, while SV has enabled the sharing of waste data and improved its collaboration with responsible agencies and councils, it has made little progress to address identified data quality issues. SV advised that a lack of regulatory measures means it cannot resolve identified data quality issues. If this is the case, then SV should advise government of the necessary regulatory changes to enable this resolution.

#### Waste needs and gap analysis

In 2014, SV commissioned a waste data needs and gap analysis, with the intent that this would identify options for a data governance framework.

The 2014 report on this analysis highlighted 20 key recommendations for SV and, where appropriate, in collaboration with EPA and the seven WRRGs, to:

- design, develop and implement a data warehouse for waste datasets
- review the Guideline and, if appropriate, roll it out to all waste facilities across the state
- undertake additional primary data collection to suitably disaggregate information on particular material streams
- build more detailed industry profiles of waste generation, recycling and disposal across metropolitan Melbourne and regional Victoria
- design and implement processes for enhanced data analysis of existing and new datasets.

#### Waste Data Governance Framework

In 2015, SV developed the Waste Data Governance Framework to support the effective management of waste data.

SV, DELWP, EPA and the regional WRRGs, including MWRRG, signed a Memorandum of Understanding (MoU) in 2016 to implement the Waste Data Governance Framework. The MoU and the Waste Data Governance Framework state that SV is the central coordinator of the Framework and its implementation. SV chairs the Waste Data Working Group, which includes representatives from DELWP, EPA and WRRGs.

The Waste Data Governance Framework acknowledges that the waste sector lacks a consistent, clear and robust system to effectively manage waste and resource recovery data. It provided for a three-year implementation plan to:

- develop and implement standards and guidelines to allow the collection of consistent and accurate datasets
- share collected waste data in a timely manner across relevant government agencies
- identify roles and responsibilities across relevant agencies, including identifying data owners who will be accountable for ensuring that waste datasets meet relevant quality measures.

While work on the second and third tasks was completed in 2017, SV is yet to action the development of standards to allow for the consistent and accurate collection of waste data. SV advised that it continues to work on this.



# 4

## Identifying and managing risks

Waste management is complex. It relies on varying types of infrastructure, private businesses, export markets, and multiple agencies across multiple levels of government. The potential impacts of failure of this system on human and environmental health are significant. As such, waste management is a critical function of government that warrants high levels of risk assessment and management to address factors that:

- result in unacceptable risks to the Victorian community and environment
- threaten the viability of the sector and the continuity of kerbside services
- heighten Victoria's exposure to international waste market fluctuations.

The effects of recent changes to the international export market for recyclables on the Victorian waste management system have shown the truth of this. This Part examines the approaches of responsible agencies to risk in the waste management system.

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### 4.1 Conclusion

DELWP and EPA have responded reactively to the risks that have eventuated within the waste management system, rather than foreseeing and mitigating them. This is despite the presence of lead indicators, such as the obvious heavy reliance on export markets, the earlier flags that the export market was shutting down, the limited infrastructure to locally reprocess recyclables, and the growing environmental and public health risks from significant waste stockpiles across the state.

As these risks emerged:

- DELWP and SV did not provide strong, timely advice to government to minimise the risks to waste services in Victoria.
- EPA was slow to act on recyclable stockpiles, and more recently with hazardous waste stockpiles. It took a toxic fire at Coolaroo in 2017 to spur EPA to take more serious action.

The ongoing risk is that there is no clear and comprehensive plan forward. DELWP's planned Circular Economy policy is not due until 2020, there are no infrastructure plans to address emerging issues, and there will likely be considerable time between the release of a plan and implementation of any new infrastructure. Yet recyclables continue to grow without viable alternatives to stop them from ending up in landfills or contributing to further stockpile issues.

Affected Victorian communities are understandably concerned about EPA's ability to effectively regulate the management of hazardous wastes and waste stockpiles. The Victorian community has the right to expect that where recovery facilities and the storage of waste pose health and environmental risks, EPA will promptly identify these risks, work with relevant agencies, and apply the full force of the law.

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## 4.2 Market demand for recyclables

### Government response to the loss of export markets

#### *Recycling Industry Strategic Plan*

In February 2018, the Victorian Government provided temporary relief funding of \$13 million to local councils and the recycling industry to help deal with the short-term impacts of the Chinese Sword Policy. The package allocated:

- \$12 million for councils to subsidise the new collection fees imposed by their waste recovery contractors to 30 June 2018, with councils expected to shoulder these costs beginning 2018–19
- \$1 million for resource recovery facilities to upgrade their sorting machinery and increase the quality of baled recyclables for exports.

In July 2018, the government released the RISP to:

- stabilise the recycling sector
- increase the quality of recycled materials
- improve the diversity and productivity of the recycling sector
- develop markets for recycled materials.

The temporary relief funding was a welcomed and important government intervention. DELWP coordinated the funding release to all 79 Victorian councils in a timely manner. The RISP is a well-developed action plan that clearly articulates specific interventions that are currently being coordinated by relevant agencies. For transparency, DELWP should publicly report on the progress of RISP implementation before the end of the financial year.

#### Earlier planning for a response

DELWP together with SV could have more closely monitored early developments in China to better anticipate potential impacts on the state's waste. In many ways, China's heightened regulation under its Operation Green Fence Policy beginning in 2013 foreshadowed its subsequent announcements to significantly restrict its waste importation.

DELWP advised that although it was aware of China's July 2017 announcement to restrict waste imports, it did not know whether China would actually do it. However, given Victoria's significant reliance on the Chinese market, particularly for recycling kerbside waste, the risk and the impact of China's decision warranted a proactive response. DELWP did not provide strong, timely advice to government on the risks associated with Victoria's dependence on overseas markets for recycling. It was not until January 2018—when the significant export restrictions had already started—that DELWP and SV started to develop a list of possible interventions and support councils to develop contingency plans. In July 2018, the government released the RISP.

It is likely that the lack of reliable waste export data limited government's understanding of the actual exposure of Victorian recyclables to the international market, particularly China. The 2017 Resource Recovery Facilities Audit Taskforce's interim report suggests that SV's export data, which SV advised is partly based on Australian Bureau of Statistics' data, is significantly underestimated. Figure 4A compares SV's reported data with the Taskforce's estimates.

**Figure 4A**  
**Comparison of export data, 2015–16**

SV data	Taskforce report
Reported exports:	Actual exports could be as high as:
<ul style="list-style-type: none"><li>• 44 per cent for paper</li><li>• 58 per cent plastic</li><li>• 18 per cent for metal</li></ul>	<ul style="list-style-type: none"><li>• 60 per cent for paper</li><li>• 80 per cent for plastic</li><li>• 90 per cent for steel</li><li>• nearly 100 per cent for aluminium</li></ul>

Source: VAGO, using December 2017 Resource Recovery Facilities Audit Taskforce interim report data.

**Further export restrictions**

In April 2018, China further announced that it would stop importing paper and plastic altogether, regardless of contamination levels, effective 1 January 2019. The latest restrictions also include scrap metals, such as stainless steel, copper, aluminium and ferrous metals.

SV is the state's lead agency tasked to achieve the government's goal to develop markets for recycled materials. The RISP and MDS tasks SV to:

- support the development of end markets for recycled materials
- drive demand for products containing recycled materials through government procurement.

In response to China's latest import restrictions, SV advised that it has commenced a market advisory service to:

- identify potential new market opportunities for plastic, paper and glass (mostly domestic market options)
- collect and collate information on market conditions, including import restrictions and implications for Victorian recycling operators.

Moreover, SV advised that it is working with the Department of Jobs, Precincts and Resources to target its investment facilitation service to identify market-ready projects for plastics, paper and cardboard, and to provide targeted investment, or, if appropriate, link these projects into other government funding streams.

SV advised that as part of the RISP, it has commenced working with DTF to assist Victorian Government agencies to identify opportunities to purchase more recycled products including construction and development material, paper and other supplies, furniture, and other office and field equipment. Setting targets for government procurement of recycled products and materials could fast-track this initiative.

#### *Other Victorian Market Development Strategy for Recovered Resources activities*

To date, SV's activities under its MDS have largely targeted new and expanded uses for products that include recovered glass, tyres and recycled concrete.

SV's research and development initiatives have made good progress in:

- amending VicRoads' specification requirements to require sourcing crumb rubber from authorised tyre recyclers
- encouraging the use of recycled tyre products in local government road construction
- confirming the usability of recovered glass and plastics for concrete footpaths and rail sleepers.

SV advised that its activities under its MDS have allowed for the direct use of Victorian recyclables, particularly:

- 8 000 tonnes of recycled glass (from roughly 40 million waste glass bottles) for the Bulla Road to Power Street section of the Tullamarine Freeway widening project in 2018
- 3 972 tonnes of recycled glass and plastic (from roughly 1.2 million waste glass bottles, 3.1 million plastic bags and 71 500 toner cartridges) for three kilometres of roads in various suburbs across metropolitan Melbourne in 2017 and 2018
- some 600 000 tonnes of recycled concrete for portions of the Peninsula Link, Eastlink and Dingley arterial road.

## EPA action against a resource recovery facility operator

On 14 February 2019, EPA ordered one of the three Victorian resource recovery operators to stop receiving collected recyclables at its Coolaroo and Laverton facilities because its stockpiles posed an unacceptable fire risk. EPA officers identified issues with the size and configuration of stockpiles, lack of access, and the separation distances between stockpiles, and buildings and other stockpiles.

This particular resource recovery operator lost its major market when China decided to significantly restrict importing recyclables and despite its efforts to find new markets, was unable to move its growing stockpiles. The operator services 34 Victorian councils, including 18 metropolitan councils and, according to DELWP, collects more than half of the state's recovered resources from council kerbside waste.

Because of EPA's action, the operator's Coolaroo and Laverton sites were banned from receiving new recyclable materials from 14 February 2019 until 15 March 2019 for the Coolaroo site, and 20 March 2019 for the Laverton site.

The affected councils did not receive prior warning about the closure order. They first heard about it from EPA after business hours on 14 February 2019, the day the action against the operator was taken.

Although it is important to swiftly respond where necessary to protect the community and the environment from harm, EPA's action meant that councils had no opportunity to prepare for alternative arrangements for their recyclables. Many affected councils had no choice but to send these to landfills during the closure period.

DELWP, as the lead Victorian agency with portfolio responsibility of the waste sector, attempted to identify contingency measures and minimise the adverse consequences of this order. It explained that it first knew of the impending EPA action late in the afternoon of 8 February 2019, and while it tried to find contingency measures so that recyclables would not end up in landfills, it was unable to do so.

MWRRG advised that together with other regional WRRGs, it assisted affected councils to put contingency plans in place and, as a result, was able to save some recyclables from being sent to landfills. Notwithstanding, DELWP's documentation suggests that nearly 500 tonnes of collected recyclables were sent to landfills for every day that the two recovery facility sites were closed.

The participation of the Victorian community is a critical component of the recycling system and the disposal of segregated recyclables to landfills is a serious disincentive to continued recycling efforts.

SV's April 2019 *Recycling Attitudes and Behaviours Survey* found that 96 per cent of respondents who saw media reports on recyclables going to landfill were either concerned or very concerned about it. The survey also indicated that 60 per cent of those who saw the news took some form of action as a result of seeing the media reports, including:

- discussing the recycling issue with my friends/family
- trying to reduce the amount of recyclables produced, recycling different material, or recycling fewer materials
- finding different ways to dispose of their recyclables
- getting further information online.

Notwithstanding, SV's June 2018 and April 2019 *Recycling Attitudes and Behaviours Survey* show that the majority of Victorians still believe that recycling is important to protect the environment, and that it is the responsibility of the individual to do the right thing.

### Monash and Banyule councils

The councils included in this audit, Monash and Banyule councils, engage the services of a different recovery facility for their recyclables. Therefore, EPA's action against the sanctioned recovery facility did not affect them.

Both councils are also taking steps to ensure that their waste services to their communities remain uninterrupted. Banyule Council works closely with its recovery facility operator who leases council property for its Heidelberg site. This lease arrangement provides stability to Banyule Council's continued collection of recyclables from its residents.

Monash Council is proactively working to negotiate and execute a two-year extension of its current recycling contract to ensure the collection and receipt of its residents' kerbside recyclables. Both Monash and Banyule councils are also coordinating with MWRRG to participate in the latter's collective procurement for recyclables collection services, which is expected to be available in 2020.

### Victorian councils

To meet community expectation that the recyclables they segregate do not end up in landfills or waste stockpiles, Victorian local governments and WRRGs should work together to better and more efficiently deliver waste services. This should include setting performance measures and reporting requirements in arrangements with waste contractors to demonstrate that recyclables are actually recycled.

Councils can also purchase products made from recycled resources. This will help create and expand markets for recycled products, increasing the likelihood that recyclables segregated by their residents are recycled.

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### 4.3 Sufficiency of infrastructure

#### Infrastructure planning

Further risks for the sector exist given the inadequacy of waste infrastructure planning. Neither the SWRRIP nor MWRRIP provide a clear plan for future infrastructure. They do not specify the estimated cost, type or location of infrastructure needed to increase resource recovery rates now and into the future. In comparison, SA's *Waste and Resource Recovery Infrastructure Plan* estimates the cost of investment needed for new or expanded infrastructure for different diversion scenarios over the next 10 to 30 years.

#### Infrastructure capacity analysis

Since 2014, the Act has required WRRGs to prepare a regional implementation plan for each region. The objective of these RWRRIPs is to set out how the waste and resource recovery infrastructure needs of metropolitan and regional areas will be met over at least a 10-year period.

Based on the infrastructure plans prepared by WRRGs, SV's view—as stated in the 2018 SWRRIP—is that, in general, there is sufficient waste recovery and landfill infrastructure to service Victorian waste until 2025. This may have been true when capacity analyses were done in 2014 and 2015. However, it has become clear that the state needs more local reprocessing facilities to convert recovered materials into products that can be used again, or to energy. SV's 2018 update of the SWRRIP did not consider the impacts of the significant consequences of the Chinese Sword Policy on Victoria's waste infrastructure needs despite China's announcement in July 2017. Neither did it consider the early indications in 2013 that China was getting stricter with the contamination levels of the waste it was importing.

Figure 4B shows MWRRG's assessment in 2016 of whether metropolitan Melbourne has sufficient waste infrastructure capacity for the subsequent 10 years.

**Figure 4B**

**Metropolitan Melbourne infrastructure capacity analysis 2016–25**

Infrastructure type	Analysis
Recovery infrastructure	Sufficient capacity until 2025
Reprocessing infrastructure	<ul style="list-style-type: none"> <li>• Insufficient capacity for paper, plastics and cardboard—however, ‘the direct export of these materials for reprocessing will continue to cover the shortfall and there may not be a particular need to increase local capacity’</li> <li>• Significant shortfall in capacity to reprocess timber and tyres</li> <li>• Sufficient capacity to process food and garden organics in line with recovery projections</li> <li>• Requires infrastructure investments in mechanical biological treatment and WtE to increase MSW recovery rates to 55 per cent or higher—current MSW recovery rate is 46 per cent</li> </ul>
Disposal (landfill) infrastructure	<p>Melbourne is at risk of having inadequate landfill capacity by 2025 if appeals against approved planning permits or works approvals are successful. This would effectively stop or delay any increase in air space for metropolitan Melbourne's waste.</p> <p>If the air space above a metropolitan Melbourne landfill cannot be increased, a new landfill of similar capacity will need to be scheduled by 2021 and commissioned by 2026.</p>

Source: VAGO, from the 2016 MWRRIP.

MWRRG is working with DELWP, SV and south-east metropolitan councils to reduce their reliance on landfill by establishing new and more efficient resource reprocessing infrastructure, which may include the use of WtE technology (discussed in Part 2). However, it is unlikely that this infrastructure will be ready in six years' time to absorb potential shortfalls in Melbourne's landfill capacity.

MWRRG advised that it has commenced a review of its infrastructure capacity through a review of the MWRRIP, taking into consideration export market changes. Further, MWRRG is working to collectively tender for recycling services on behalf of metropolitan councils, to be available by 2020, to reduce current reliance on the export of recyclable materials and attract local options.

#### 4.4 Waste regulation

The Act provides EPA with regulatory and enforcement tools to use against persons or waste operators. Figure 4C lists some of these. The first three involve instances when the Act makes it an offence to dump, abandon or otherwise improperly manage waste when it results in a:

- serious threat to public health
- state of danger, whether imminent or otherwise
- substantial risk of serious damage to the environment
- substantial risk of a serious threat to public health.

In these instances, actual damage or imminent environmental hazard is not a requisite element of the offence. These enforcement tools are available to EPA under the Act and carry substantial fines of up to \$1.6 million. Section 59E(d) on aggravated pollution includes a jail term, in lieu of fines, for individual offenders. EPA's more frequent use of these provisions could have served as a strong disincentive to irresponsible, illegal, and rogue practices that have resulted in large-scale waste stockpiles across the state.

**Figure 4C**  
**EPA Act provisions available to EPA**

Provision	Explanation	Penalty
s. 27A(1)(c) Offences relating to industrial waste	Cause or permit environmental hazard, which is a state of danger to human beings or the environment whether imminent or otherwise resulting from the location, storage or handling of any substance having toxic, corrosive, flammable, explosive, infectious or otherwise dangerous characteristic.	2 400 penalty units plus, in the case of a continuing offence, a daily penalty of 1 200 penalty units* for each day the offence continues after conviction.
s. 27A(2)(a) Offences relating to industrial waste	Dump or abandon waste at an unlicensed site.	5 000 penalty units, plus in the case of a continuing offence, 2 500 penalty units for each day the offence continues after conviction.
s. 59E Offences of aggravated pollution	Aggravated pollution—includes substantial risk to public health—results in: <ul style="list-style-type: none"> <li>• a serious damage to the environment; or</li> <li>• a serious threat to public health; or</li> <li>• a substantial risk of serious damage to the environment; or</li> <li>• a substantial risk of a serious threat to public health.</li> </ul>	2 500 penalty units or seven years imprisonment or both.  In the case of a body corporate, a fine of 10 000 penalty units.
s. 31A Pollution abatement notice (PAN)	EPA being satisfied use of the premises either: <ul style="list-style-type: none"> <li>• has caused or is likely to cause a failure to comply with any requirements contained in any policy; or</li> <li>• has caused or is likely to cause pollution; or</li> <li>• has created or is likely to create an environmental hazard.</li> </ul>	
s. 54(1) Furnishing of information	EPA has the power to require the occupier of any premises to furnish to EPA information as to any waste that is being or is likely to be stored on the premises.	

Note: \*One penalty unit is currently \$161.19, *Monetary Units Act 2004*.

Source: VAGO, using the Act.

EPA advised that despite these provisions in the Act, it did not have appropriate powers to deal with stockpiles and the risk of fire and that it needed a new policy—the 2017 *Interim Waste Management Policy (Resource Recovery Facilities)*, and the subsequent 2018 *Waste Management Policy (Combustible Recyclable and Waste Materials)* (CRWM Policy) to address these.

EPA received legal advice that section 31A of the Act, in conjunction with the CRWM Policy, is an available power for EPA to put resource recovery facilities on notice for their growing stockpiles. However, the advice notes that section 31A may not be the best option to use because a PAN only takes effect 30 days after it is served, and therefore may not address the most urgent risks.

The 2018 *Management and storage of combustible recyclable and waste material Policy Impact Assessment* (CRWM PIA) states that the use of the Act's provisions on general pollution offences to mitigate fire risk is difficult and inefficient. The CRWM PIA identified several barriers to EPA's use of these provisions:

- EPA does not have fire risk expertise and therefore requires the assistance of fire services.
- Proving likely pollution or likely environmental hazard is difficult.
- Prosecutions are costly and time consuming.
- Recovering costs through the courts can be challenging.

EPA further advised that amendments to the Act that will take effect in 2020 give it more power to address stockpiling issues. Some of these are indicated in Figure 4D.

**Figure 4D**  
**Some 2018 amendments to the Act—resource recovery**

Issue	Provision and intended effect
Stockpiling/abandonment	<p>Clear trigger for issuing notices—clear power to issue an environmental action notice to reduce stockpiles of waste. Issuing a notice to do this has often been difficult under the current Act.</p> <p>New permission tiers—sit below licensing (permits and registration) and provide lower burden options to better manage activities that are liable to stockpiling or abandonment.</p>
Illegal dumping	<p>Higher penalties for illegal dumping offences—to deter conduct of these offences. Penalties for litter/ non-industrial waste dumping graduated based on the volume of waste dumped.</p> <p>Duties relating to industrial waste—places a clear duty on persons to ensure that the place is authorised to receive industrial waste. In addition, persons involved in transporting industrial waste, including generators and producers of industrial waste, have an obligation to take reasonable steps to ensure the waste is transported to and received at a place authorised to receive industrial waste.</p>
Rogue operators	<p>Repeat waste offender penalty—enables courts to impose a sentence of up to two years imprisonment on repeat industrial waste offenders.</p> <p>Prohibited person provisions—enables undesirable operators to be excluded from undertaking specified activities or be subject to an imprisonment term if they undertake an activity that requires a permission without approval.</p>

Source: VAGO, from EPA documentation.

These provisions presumably provide additional clarity and certainty for how EPA can address particular waste sector issues. It is not clear how and to what extent it will use these additional powers.

## Stockpiles at resource recovery facilities

Stockpiling is a significant concern due to the potential for levy avoidance through the indefinite holding of material without either recovering and selling the materials or disposing them to landfill.

There is a need to balance the legitimate need of operators to undertake some degree of stockpiling against excessive stockpiling that creates environmental and abandonment risks.

The broad range of risks associated with stockpiling various wastes includes fire, litter, dust and odour emissions, attraction of vermin, and safety risks due to the instability of stockpiles.

### Resource Recovery Facilities Audit Taskforce

In response to the July 2017 Coolaroo fire, the Victorian Government established the Taskforce to identify and assess waste stockpiles across the state. The Taskforce prioritised addressing risks associated with legitimate resource recovery facilities over illegal dumping.

The Taskforce identified 831 sites across the state and classified five as extreme risks and a further 209 as high risk. Figure 4E explains the risk classifications and Figure 4F shows the spread of the stockpiles across the state. Sites classified as extreme and high risk are mostly located within the metropolitan region with smaller clusters in regional centres. These sites have diverse waste types, including construction and demolition waste, paper, plastic, composts and metal scraps.

**Figure 4E**  
**Risk assessment of identified sites**

Rating	Description	Number of sites
Extreme	Excessively large stockpiles of waste with no effort made to separate stockpiles. Fire impossible to contain.	5
High	Large disorganised waste piles with separation distances absent or inadequate. Fire would be difficult to contain.	209

*Note:* The Taskforce did not include its assessment for the remaining 617 stockpile sites.

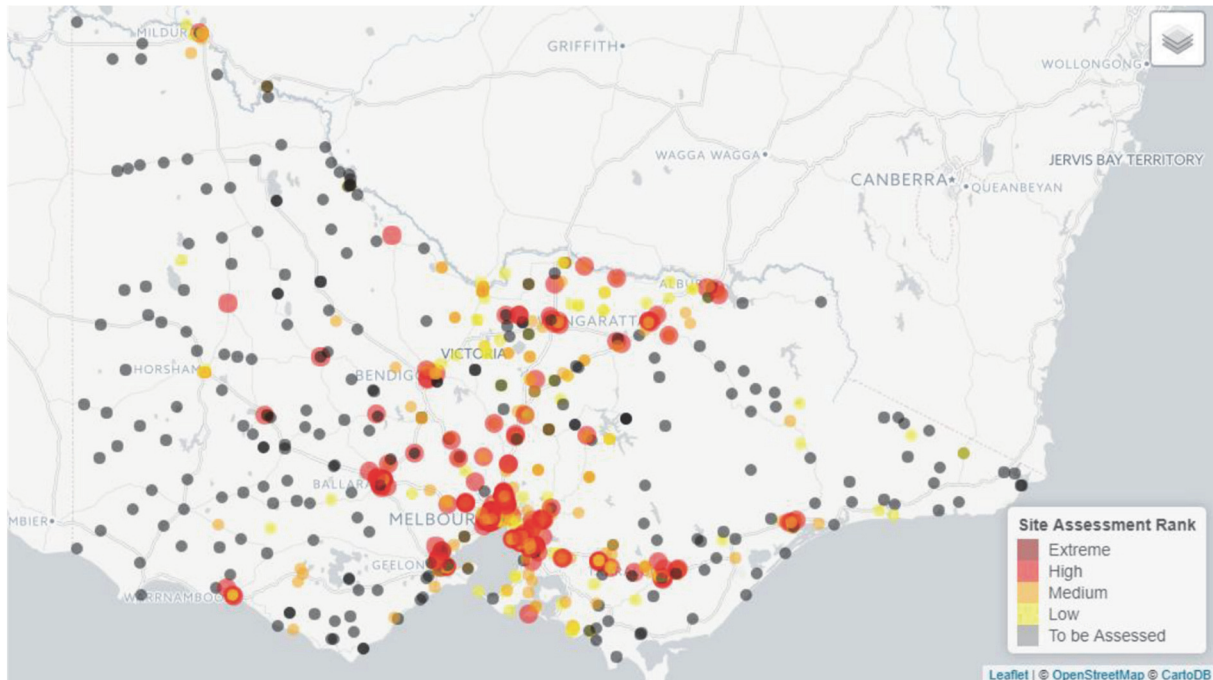
*Source:* VAGO, from the June 2018 Taskforce report.

EPA advised that as at April 2019, four of the five sites that were assessed as posing extreme risks were compliant with the 2018 CRWM Policy.

The fifth site, involving a C&D waste stockpile in Lara, will be cleaned up at taxpayers' expense, at least initially. On 30 April 2019, the Minister announced that to reduce risk to community and environment, the government has provided initial funding of \$30 million for fire prevention measures and site clean-up. The site contains an estimated 320 000 cubic metres of mostly C&D waste, including materials such as timber, concrete, bricks, plaster, glass and ceramics.

**Figure 4F**

**Location and initial assessment of identified resource recovery stockpiles**



*Note:* This map was current as at December 2017.

*Source:* December 2017 Taskforce Report.

The Taskforce undertook site inspections and reported that for many sites, it initially underestimated the risk because visual assessments did not detect internal storage or warehousing of waste. It found that many resource recovery facilities store large volumes of waste inside buildings where fire protection systems including water supply and pressure are often inadequate. The Taskforce also raised concerns that these facilities are located very close to residential areas.

From August 2017 to June 2018 the Taskforce conducted 291 inspections of 114 identified stockpile sites. Following these inspections EPA issued 61 remedial notices, four infringement notices and three official warnings (as shown in Figure 4G).

**Figure 4G**

**EPA activities on stockpiles identified by the Taskforce**

Action	Number
<b>Remedial</b>	
PANs	49
Clean-up notices	7
Minor works notices	3
Produce information notices	2
<b>Sanctions</b>	
Infringement notices	4
Official warnings	3

Source: VAGO, from June 2018 Taskforce report.

**C&D recovery facility issued closure order—1 April 2019**

On 1 April 2019, EPA ordered a C&D recovery facility in Coolaroo to stop accepting CRWM until it implemented measures to reduce the fire risks associated with the stockpiles at the site.

The Taskforce officers found the premises had large stockpiles of waste and recyclable materials that presented a significant risk of fire and would be difficult to extinguish.

The company processes C&D waste, including timber, plasterboard, foam, insulation, cardboard, plastic and metals.

**Fire incidents**

Available data indicates that for the 10-year period from 2008 to 2017, there were 136 separate fire incidents at resource recovery facilities across the state. Of these fires, 79 (58 per cent) took place at sites identified by the Taskforce as extreme and high risk.

The data also indicates that the majority of the 136 recorded fires were most likely due to malfunctioning onsite machinery or human error, although for many of them the cause remained unknown.

Figure 4H shows the frequency of fires at resource recovery facilities over the period 2008–17, according to the Taskforce site risk classification.

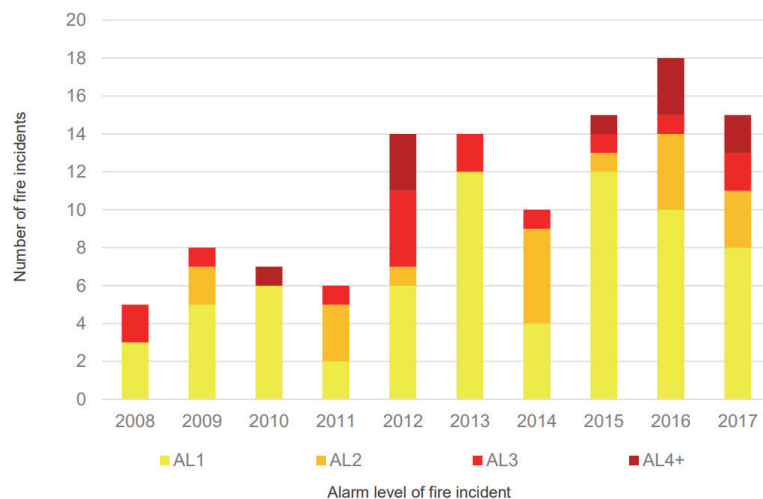
**Figure 4H**  
**Number of fires by Taskforce risk category at resource and recovery facilities, 2008–17**

Risk category	Number of fires
Extreme	14
High	65
Medium	39
Low	18
<b>Total</b>	<b>136</b>

Source: VAGO, from DELWP 2018 *Management and storage of combustible recyclable and waste material Policy Impact Assessment*.

Figure 4I shows that most of the fires at resource recovery facilities took place between 2012 and 2017, with 2016 having the highest number of incidents.

**Figure 4I**  
**Number of fires at resource recovery facilities, 2008–17**



Note: Alarm levels refer to fire severity.

Note: The total number of fires as shown in Figure 4I is 112. This differs from the total of 136 in Figure 4H. DELWP noted that this is because the dataset used to produce Figure 4H is slightly different from that used for Figure 4I.

Source: DELWP 2018 *Management and storage of combustible recyclable and waste material Policy Impact Assessment*.

Many of these fires burned for days, generating hazardous air pollutants, oil runoff and leachate that affected the soil, waterways and air.

**PM2.5**

Particulate matter (or air pollutants) are smaller than 2.5 micrometres (0.0025 millimetres) in diameter. Often described as fine particles, they are up to 30 times smaller than the width of a human hair.

During the July 2017 Coolaroo fire, nearby residents were evacuated from their homes, 12 required medical attention and four were hospitalised. Nearby businesses closed, and local residents were asked to remain indoors. Recorded air quality at the time showed high levels of airborne PM2.5, which is known to cause respiratory and other serious illnesses.

## Hazardous waste in metropolitan Melbourne warehouses

Following the August 2018 fire at a West Footscray hazardous waste warehouse, EPA investigations identified several other warehouses similarly filled with highly flammable solvents, aerosols, cleaning liquids, paint, and other hazardous chemicals.

These hazardous waste sites are separate from the 831 sites previously identified by the Taskforce for closer monitoring—its focus being resource recovery facilities. EPA regulates the movement of hazardous wastes in the state, however, as these hazardous sites were not authorised, they did not hold the appropriate EPA permit to store hazardous or prescribed industrial wastes.

Effective EPA oversight—informed by regulatory inspections and joined-up intelligence activities with relevant agencies—could have earlier identified and potentially addressed the illegal storage of waste chemicals and dangerous goods in warehouses.

On 5 April 2019, another fire broke out at a hazardous waste storage site in Campbellfield, north of Melbourne. In contrast to the previously identified hazardous waste storage sites, the operator of this site has an EPA licence to process toxic chemical waste. EPA suspended it the month before the fire for storing more waste than permitted, and for not adequately storing containers indoors in breach of its licence conditions.

Emergency Services Victoria advised residents in Broadmeadows, Pascoe Vale and Coburg to stay indoors. The Department of Education and Training ordered the closure of many nearby schools because of the fire.

Affected communities are understandably concerned over their exposure to poor air quality, school closures and business disruptions as a result of waste fires. Given the frequency with which fires are occurring, EPA needs to also prioritise addressing illegal and non-compliant behaviour in the hazardous waste sector. The Victorian community has the right to expect that where recovery facilities and the storage of hazardous waste pose health and environmental risks, EPA will promptly identify these risks, work with relevant agencies, and apply the full force of the law.

EPA advised that since the August 2018 West Footscray fire, it has been working with WorkSafe Victoria and other relevant agencies to:

- focus on combustible recyclables with 513 inspections, covering 156 high-risk sites, with 159 remedial notices and 28 sanctions issued since the July 2017 Coolaroo fire
- inspect sites that potentially contain hazardous wastes, with 150 inspections conducted since the August 2018 West Footscray fire.

The extent of waste stockpiles across Victoria shows that these are not isolated instances of poor waste management—it has become a large-scale and systemic problem.

### Stricter regulations in other jurisdictions

Stricter and more effective regulations in other jurisdictions meant that waste from these states, particularly recovered recyclables and end-of-life tyres, were transported to Victoria and have contributed to our growing stockpiles.

For example, prior to EPA regulation of waste tyre storage in 2014, waste tyres from SA and NSW were transported to Victoria for stockpiling. Both jurisdictions have more stringent regulatory frameworks relating to the transport, storage and disposal of waste tyres. This meant that it was cheaper to pay for the transport of waste tyres to Victoria for stockpiling than to dispose of them to licensed sites in either SA or NSW.

Also, the SA EPA has stricter requirements on the amount and method of storing recyclables in resource recovery facilities, including for stockpiles to be stored in enclosed, undercover facilities. There is no such requirement in Victoria and baled, commingled recyclables from SA have been transported for stockpiling to a resource recovery facility in metropolitan Melbourne.

### Waste tyres

EPA estimated that in 2013 there were approximately 14 million tyres stockpiled in various locations across the state. In response, EPA developed the 2014 interim *Waste Management Policy* (Storage of Waste Tyres) and revised the 2015 *Environment Protection (Scheduled Premises and Exemptions) Regulations*.

However, legacy tyre stockpiles continue to pose significant public health and environment risks. Despite initiating enforcement actions, EPA has not been able to compel tyre storage operators or landowners to clean-up the most significant stockpiles.

In August 2017, EPA removed approximately one million tyres from a site in Stawell at taxpayers' expense. Of the 9 464 tonnes of waste tyres removed from the site, 5 978 tonnes were recycled with the remaining 3 486 tonnes shredded prior to sending to landfill.

EPA spent \$5 million for the clean-up and is now working to recoup its expenses from the Stawell waste operator. However, there is little assurance that the \$5 million clean-up cost will be fully recovered from responsible parties.

In late 2018, EPA announced it would also clear approximately 900 000 waste tyres at a Numurkah stockpile. This will also be at taxpayers' expense, at least initially.



# 5

## Changing community behaviour

A key policy objective of government is to reduce Victoria's reliance on landfill. Changing community behaviour to prioritise waste avoidance, re-use, and recycling will be key to achieving this. Landfills create social and environmental problems, including greenhouse gas emissions, soil and water pollution, and amenity issues such as odour, dust and vermin for surrounding communities. Therefore, we should save landfills for wastes that cannot be recycled or recovered.

The waste hierarchy identified in the Act prioritises waste avoidance, followed by re-use and then recycling. Education is a key tool that agencies can use to encourage behaviour change and promote the waste hierarchy priorities. Education to drive behaviour change is most effective when it reinforces key messages over time and is tailored to local areas.

Education and incentives are important as Victorians' participation in the waste and resource recovery system is critical for its success. To keep waste and resource recovery services running, continuous participation of individuals and businesses is required—for example, to store garbage in a specific bag or bin, bring it to an agreed point, or separate recyclables from those going to landfill. Changing the behaviour of the community and business, particularly to avoid waste, is challenging because the creation of waste is strongly linked with consumption and lifestyle choice.

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### 5.1 Conclusion

Responsible agencies are not taking a strategic, statewide approach to changing community behaviour to minimise reliance on landfill, and therefore not fulfilling this important policy objective. In Victoria, there remains significant opportunity to avoid and reduce waste generation, increase recycling, and divert recyclables currently going to landfill.

DELWP, SV, MWRRG and councils are not effectively encouraging the community, through education and incentives, to reduce waste and recover resources.

For example, many Victorians still do not understand what is and what is not recyclable. This is due to both the lack of ongoing, comprehensive education campaigns to change community behaviour to improve recycling and reduce contamination levels, and the different recycling practices across local governments.

Waste management in Victoria also does not prioritise waste avoidance and instead focuses on managing materials already in the waste stream.

Despite focusing on managing materials already in the waste stream, responsible agencies are also missing a key opportunity for diversion—organic waste. Organic waste makes up almost half of recyclable materials still going to landfill. DELWP, SV and MWRRG have not taken strong action to address this. To date, government funding for activities to increase the recycling of organics has been limited. However, DELWP and SV did not provide detailed enough advice to government specifying and costing out actions when it sought funding.

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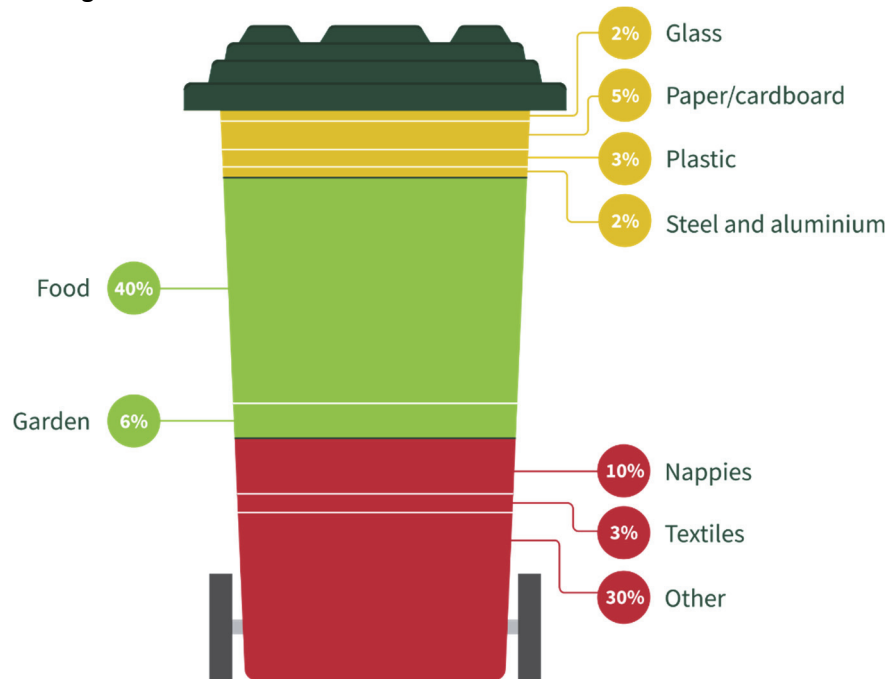
## 5.2 Disposal of waste to landfill

According to available data, SV estimates that Victorians send 33 per cent of generated waste to landfill.

In 2015, Banyule Council conducted a bin audit and estimates that 58 per cent of its kerbside garbage bins—40 per cent food organics, 6 per cent garden organics and 12 per cent other recyclables—could have been viably recovered for recycling or reprocessing as shown in Figure 5A. For the same year, Monash Council's bin audit estimates that 65 per cent of its average kerbside garbage bins—51 per cent food organics, 6 per cent garden organics and 8 per cent other recyclables—could be further recovered.

SV conducted a bin audit in 2013. The results are consistent with Banyule and Monash councils' bin audits and show that nearly half of the average Victorian garbage bin holds valuable materials that could be recycled rather than disposed of to landfill. These bin audits show that the state's current recovery rate of 67 per cent could be higher if the recyclables in garbage bins are separated for recycling or reprocessing.

**Figure 5A**  
**Garbage bin audit**



Source: Banyule Council's *Towards Zero Waste Management Plan*.

### 5.3 Waste avoidance

**Product stewardship** is a scheme whereby producers take responsibility for the recycling of the products they sell. Examples include TyreCycle for waste tyres, and Paintback for used paint tins and waste paint.

The Act's waste hierarchy prioritises how the community and responsible agencies should manage waste to achieve the best possible environmental outcomes. Waste avoidance is the first of the seven options.

DELWP, SV, MWRRG and councils are taking some waste avoidance actions at the statewide, regional and local levels including:

- the Victorian Government's role in developing national product stewardship arrangements
- DELWP's development of the plastic bag ban
- DELWP's development of the Plastic Pollution Action Plan
- the Minister's endorsement of national packaging targets
- SV's Love Food Hate Waste (LFHW) campaign
- Monash Council's 2017 *Waste Management Strategy*, which includes targets for a reduction in annual kerbside waste generation (residual, recycling and organics) per resident, per year.

While current waste instruments refer to the waste hierarchy and mention waste avoidance, none focuses directly on improving waste avoidance practices. As a result, responsible agencies focus their efforts on managing waste already in the system and do not give avoidance actions sufficient preference or attention. They should increase their efforts to encourage businesses, the community, and industry to avoid creating waste in line with legislative priorities. Less waste overall would result in cost and environmental benefits.

Other jurisdictions such as France and Canada are delivering initiatives to ensure businesses practice food waste avoidance.

In 2015, France became the first country in the world to ban supermarkets from throwing away or destroying unsold food. Instead, supermarkets donate surplus food to charities and food banks. Large supermarkets must sign donation contracts with not-for-profit organisations. In addition, food organics recycling is mandatory for all businesses that produce at least 10 tonnes of organic waste per year.

Since 2015, Vancouver has imposed a fine of 50 per cent on top of disposal costs when food is found in general waste bins for all buildings (including healthcare, retail and restaurants) to encourage people to use their green waste bins and recycle organic materials.

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## 5.4 Waste education

Victorians are still not clear on what is and what is not recyclable due to the lack of a clear and consistent statewide approach to education, short-term campaigns, and inconsistent practices across local governments. For example, many Victorians do not know that takeaway coffee cups are not recyclable because they have a plastic lining. The plastic lid, however, is recyclable.

Educational campaigns are an efficient and often effective way to drive behavioural change. However, behaviour change requires consistent, sustained messages and support tools.

SV, MWRRG and councils have delivered waste education using several education programs or communication campaigns that have raised some awareness of waste and resource recovery issues. However, they could be delivering state, regional and local education campaigns more efficiently with greater resourcing, coordinated long-term project time lines and by better leveraging existing materials and resources already developed by other agencies.

### Limited coordination and sharing of materials

There is limited coordination and sharing of materials between SV, MWRRG and councils, which are all working in this space to ensure an efficient and effective approach to waste education.

### Food organics and garden organics campaigns

SV, MWRRG and councils all developed separate education campaigns and materials associated with food waste education:

- SV developed LFHW in 2014 after identifying the need for a campaign to raise community awareness of food waste avoidance.
- MWRRG launched the Back to Earth program in 2013 to promote the importance of compost, develop its market, and support the opening of three collectively procured organics processing facilities in metropolitan Melbourne.
- The City of Glen Eira produced its own education materials to support the rolling out of FOGO recycling in its municipality.

Given that many Victorian councils are now moving to collect food waste through kerbside collections, responsible agencies should deliver a coordinated and integrated statewide approach to food waste avoidance and collection services.

### Council programs

Banyule Council's Rethink Education Centre provides interactive and multi-media sessions on waste, including on waste minimisation and recycling. It offers these services to audiences of all age levels including primary school students and adult corporate groups. SV could better use existing council waste education resources, such as the Rethink Education Centre, as part of its work to instil good waste practices in Victorians from an early age.

### E-waste campaign

In contrast, the model SV used for its e-waste education campaign was comparatively efficient. SV developed e-waste education materials at a statewide level. It consulted with 69 of the 79 councils to develop this material. It distributed this to councils to help them communicate the e-waste ban within their local area to raise awareness of the importance of keeping e-waste out of landfill.

### No long-term messaging and support tools

Except for SV's long-term education program ResourceSmart Schools (RSS), SV's education initiatives are short-term. This limits their reach, impact, and ability to effectively change behaviour and is due, in part, to limited resourcing for waste and resource recovery education campaigns.

SV ran three iterations of the LFHW program, which targeted food waste avoidance. Each campaign had resources for six weeks of advertising, which allowed the campaign to aim for reach and engagement objectives, but not to change behaviours. The 2017–18 'Love a List' campaign was designed around one behaviour that households can undertake to reduce food waste. The program evaluation reported a 41 per cent increase in waste reduction behaviours at home after the campaign. Despite this, the campaign was limited in reach due to the scale of its advertising buy of \$98 000 and short time frame.

Sufficient funding goes a long way to enhancing the effectiveness of education campaign programs. The Department of Premier and Cabinet's *Victorian Government Advertising Report 2017–18* stated that the top 10 information campaigns each received a minimum of \$2.8 million per year. In contrast, government funding for SV's waste education campaigns are short-term and project-based. For example, in 2018–19, the government allocated a one-off \$1.5 million funding to SV to run a multi-year campaign for e-waste—including for research, development, advertising and program campaign material. In comparison, government campaigns such as the level crossing removal campaign received \$2.9 million for advertising in 2017–18 alone.

## ResourceSmart Schools

SV has administered RSS since the late 1990s, making it SV's only long-term education program. It is a voluntary program and there are no requirements for schools to participate.

RSS facilitators support participating schools to:

- complete up to five RSS modules—core, energy, waste, water and biodiversity
- gain up to five stars in recognition of their sustainability results—a five-star school is the pinnacle of school sustainability, having completed all five modules, met all benchmarks, and shown sustained resource efficiency over time.

We reviewed the last two iterations of the program from 2016–17 and 2017–18. Benefits to the waste and resource recovery sector include cost savings resulting from reduced waste to landfill.

The government allocates RSS project funding on an ad hoc basis. MoUs for these projects list key performance indicators and require end-of-project evaluations.

SV's 2017–18 evaluation report highlighted an issue with data collection to inform the evaluation. For example, the RSS program requires participants to self-report and provide billing information online—such as utility bills and waste pick-up costs. The 2017–18 evaluation report noted that for many schools, data entry has been sporadic and inaccurate.

## Inconsistent council recycling practices

Waste disposal and recycling services differ among councils. These differences can act as a barrier to efficiently and effectively educating the community on what they can recycle. These include:

- recyclable materials—these differ between councils depending on who they have a contract with, for example, some councils have contracts that allow them to separate soft plastics for recycling, but others consider soft plastics a contaminant
- bin lid colours—there is an Australian Standard for bin lid colour but not all councils follow this (see Figure 5B)
- food organics recycling—19 councils allow residents to put food scraps in their green waste bin, while the others do not
- compostable bags—some councils allow residents to put their food waste in compostable bags before they place them in green organic bins—this is due to the ability of their commercial composters to reprocess these bags.

These variations impact SV's ability to deliver consistent statewide education campaigns.

**Figure 5B**  
**Non-compliance with Australian Standards Policy on bin lids**

**Variations in bin lid colours**

There is considerable variation in the bin lid colours and sizes that councils use across Victoria. A 2012 audit conducted by SV found that 560 000 bin lids in 18 municipalities do not meet the best practice Standard Australia's 'Mobile waste containers—Colours, markings, and designation requirements' 4123.7-2006 (R2017). According to analysis completed in its 2016 Bin Standardisation Guide, MWRRG found only nine out of 31 metropolitan councils are fully compliant with bin lid colour.

SV determined that it would cost \$14 million to change bin colours across the state to be compliant with the Standard. In 2012, SV received \$1 million funding for bin lid upgrades. SV advised the Minister to reallocate the funding because this would not cover the cost of upgrades.

SV and the government should provide support to the remaining councils to become compliant as this is one measure that may provide a foundation for responsible agencies to develop and run more efficient and effective statewide education campaigns with consistent messages to help residents maximise their recycling efforts.

Source: VAGO, based on SV analysis.

Councils need to tailor education materials to their recycling services. Banyule and Monash councils provide this information on their websites. Figure 5C shows an example of Banyule Council's education material on its website.

**Figure 5C**  
**Recycling information from Banyule Council**



Source: Banyule Council. <https://www.banyule.vic.gov.au/Services/Waste-Services-Rubbish-and-Recycling/Recycling-Service>

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## 5.5 Capacity building

MWRRG is increasingly supporting the professional development needs of council waste officers. It develops and delivers workshops and guidance on an as-needed basis with support from consultants.

### Advanced waste processing

MWRRG provided workshops for council officers as part of developing a regional business case for advanced waste processing. These workshops included information on:

- understanding advanced waste processing technologies
- procurement of advanced waste processing technologies
- contract models.

### Multi-unit developments

MWRRG developed guidance—the MUDs toolkit—for architects, building designers, developers, planners and waste management officers to assist councils to adopt and implement waste management planning considerations into building planning approvals processes.

It hosted a workshop for councils, state government and industry on engaging with residents and tailoring waste and resource recovery services in MUDs. The workshop featured presentations from councils showcasing innovative resource recovery solutions for managing food waste, textiles and e-waste in MUDs, a tour of a best-practice building and information on the latest social research. MWRRG advised that it will evaluate councils' and stakeholders' use of the MUDs toolkit by 2020.

MWRRG is developing educational materials for use in MUDs by owners' corporations and property managers. There was significant council interest and support in MWRRG developing these materials on behalf of councils.

### Food organics and garden organics

MWRRG delivered a training program for metropolitan and regional councils waste officers to support the implementation of FOGO collection. The workshops focusing on behaviour change received over 80 registrations and MWRRG has to cap them due to limited resources.

Many councils do not have the resources to invest in understanding how to deliver a FOGO service, although it has shown to deliver longer-term environmental, social and financial benefits for most councils.

## Land-use planning

MWRRG's Local Buffer Support Program delivered 11 training courses for land use planners in Melbourne and regional locations. The courses are part of the Planning Institute of Australia's professional development program and help land use planners meet the challenges and opportunities of planning to protect important waste and resource recovery facilities across Victoria. This \$1.3 million program was funded from the Sustainability Fund but has not been funded in 2019–20.

MWRRG will provide \$60 000 in 2019–20 for a reduced program to continue providing land use planning training to councils and regional WRRGs. The time and cost to undertake training for planning scheme amendments to implement buffer controls is prohibitive for many councils, more so in regional Victoria.

## 5.6 Managing organics and e-waste

SV, MWRRG and both audited councils identify organic waste as the key material stream they should target to increase diversion of materials from landfill because it makes up such a large portion of recyclable materials still going to landfill. Despite this, they have not taken strong action nor been able to secure funding from government to support activities to increase organics recycling. In contrast, the government has acted in a preventative manner through the e-waste ban.

## Organic waste

All audited agencies identified increasing the diversion of organic waste from landfill as a key priority. However, there is limited effort focused on this, despite that organic waste:

- has the lowest recovery rate according to the 2018 SWRRIP
- makes up 35 per cent of total solid waste sent to landfill according to the 2018 SWRRIP
- makes up 46 per cent—the largest amount of any recyclable material—in the average Victorian garbage bin according to Banyule Council's 2015 bin audit.

Food waste makes up almost two-thirds of organic waste sent to landfill and has the lowest recovery rate of all materials.

## Limited statewide guidance and support for increasing diversion of organic waste

### *Victorian Organics Resource Recovery Strategy*

The Minister launched the VORRS in September 2015 as a five-year action plan to:

- increase the recovery of organic waste
- improve practices to recover organic waste
- build confidence in recycled organic products.

Three-and-a-half years into the plan, SV has not reported on achievements against the VORRS' objectives. The 2017 SWRRIP progress report shows no increase in organic material diverted from landfill. SV advised that, while the VORRS was approved in 2015, it was not allocated funding until 2017–18 (\$300 000) and 2018–19 (\$395 000).

SV advised us that it did not identify strong commitments in the VORRS such as targets and performance measures because it was not sure what it could deliver without receiving specific funding. However, in developing the VORRS, SV should have considered the funding it required to implement it and included in its bid specific:

- targets and time lines for what it intended to achieve from the VORRS
- actions to achieve these performance measures.

In September 2018, SV commissioned a review of its delivery of the VORRS. The contractor's November 2018 interim report identifies challenges in evaluating SV's implementation of the VORRS including:

- an unclear relationship between the strategic directions and action plan priority areas
- some actions are vague and open-ended
- a lack of measurable targets and limited quantitative data to evaluate performance
- that the impact of 13 of the 30 actions completed are yet to be fully realised as the outcomes are long-term.

The review also found that stakeholders have limited knowledge of and use for the VORRS and its outputs.

The contractors completed the review in March 2019. Based on their findings, SV will develop a revised implementation plan for the VORRS. SV will need to ensure it is accompanied by performance targets and measures, as well as the required funding to implement them by September 2020—the end of the five-year time frame for the action plan originally identified in the VORRS.

#### Commercial and Industrial food waste

Food waste is the largest component of C&I waste going to landfill—589 000 tonnes annually. Despite this, the VORRS has no actions to target diversion of C&I food waste from landfill.

#### Food organics and garden organics collection services

Currently, 36 councils have a garden organics collection service and 19 councils have a FOGO collection service. An increasing number of councils, including Monash and Banyule councils, are piloting or are planning to expand their collection services to include food organics. MWRRG has facilitated collective procurement arrangements for four of the 19 councils that have FOGO services. In addition, it recently facilitated the south-east organics contract, which will result in seven additional councils introducing FOGO collection services, including Monash Council by 2020 and Banyule Council by 2021.

Fifteen of these 19 councils planned and implemented their FOGO services independently of state government. They identified the opportunity to increase their diversion to landfill rates and implemented FOGO services with limited funding and guidance from SV.

SV's Building Victoria's Organics Recovery program and Kerbside Food Organics and Garden Organics programs supported 11 regional councils to introduce FOGO collection services that would not otherwise have been cost-effective.

Consulted councils advised that they prioritised these services for a range of reasons, including:

- meeting greenhouse gas emissions reduction targets in council sustainability plans
- possible financial benefits if councils FOGO services were cheaper than landfill services and landfill levy costs combined
- pressure from the community.

Increased state government effort on the diversion of food waste from landfill through the introduction of FOGO services would result in benefits including:

- use of food waste as a resource for compost or as a bioenergy
- a reduction in greenhouse gas emissions
- cheaper costs than future landfill, Advanced Waste Technology, Advanced Waste Recovery and Reprocessing Technology or WtE facility costs
- less frequent garbage collection services, which would result in reduced transport costs and amenity issues caused by trucks.

There is an opportunity to reduce our reliance on landfill and increase resource recovery rates through increasing diversion of organic waste to landfill.

## E-waste ban

In 2014, the government committed to banning e-waste—one of the fastest-growing material stream—from landfill to reduce harm to the environment and human health, and increase recovery of valuable resources. However, there are several issues with its implementation.

The ban was originally planned to commence on 1 July 2018, but this was pushed back to 1 July 2019 after stakeholder consultation revealed that councils were not adequately prepared for it. Despite this, evidence suggests councils will not be prepared for the ban when it comes into force on 1 July 2019.

DELWP completed the e-waste Policy in June 2018, four years after the current government announced the ban as an election commitment in 2014. The significant time taken to develop the policy has left limited time for councils to sufficiently prepare for the ban in terms of:

- establishing recovery infrastructure to comply with the e-waste Policy
- setting up contracts with e-waste collectors
- educating the community about the proper management of e-waste.

DELWP advised that the bulk of the policy's content and support measures were known two years prior to its commencement and that councils could have acted earlier. Councils were reluctant to act on e-waste until details of the policy requirements were finalised.

DELWP also advised that its initial consultation on the draft policy identified infrastructure, contracts and education as key risks to effective implementation. As a result, it developed a package of support measures to assist councils to implement the e-waste Policy.

### Infrastructure

The e-waste Policy requires council transfer stations to have undercover facilities for the collection and storage of e-waste materials.

SV coordinated a \$15 million e-waste infrastructure upgrade grant and in September 2018, approved 122 applications of up to \$100 000 to assist 62 councils to upgrade their transfer stations to meet the e-waste Policy's storage requirements.

However, given each council has different sites, existing services and specific needs, the package of support may not be sufficient for all councils. For example, Banyule Council's e-waste grant application states that because its transfer station sits on an elevated engineered structure, changes to accommodate the provisions of the e-waste Policy 'requires a significant lead time to plan, engineer, obtain approvals, and then construct.' Consequently, Banyule Council's estimated cost for its total infrastructure upgrade exceeds what is available under SV's e-waste infrastructure grant program. Banyule Council is negotiating with SV about possible interim measures that fit within this program.

Moreover, the delay in DELWP's completion of the policy meant that councils had limited time to appropriately design their infrastructure upgrades and procure for and complete the required upgrades. SV reported that it expects 75 per cent of approved infrastructure upgrades to be completed before 1 July 2019.

Both audited councils advised that they will not complete their transfer station upgrades in time for the ban and will therefore not be compliant with the Standard for safe handling and storage of e-waste when it comes into force on 1 July 2019.

EPA has acknowledged that given the tight time frames, some councils may not have sufficient time to complete their upgrades before the ban. It advised that it will work with councils to ensure compliance, as long as councils work towards the completion of their upgrades.

### Collection contracts

Both audited councils currently receive end-of-life televisions and computers in their transfer stations. The Australian Government's National Television and Computer Recycling Scheme covers these products and each council has a service agreement for their collection.

In anticipation of diverse e-waste products that they will collect under the e-waste Policy, both councils tried to secure collection contracts for e-waste resources other than televisions and computers without success. Depending on the quantity and quality of e-waste they would receive, councils might hold substantial e-waste materials that no contractor will be collect. In such a situation, councils may apply for an exemption under section 30A of the Act to enable them to send e-waste products to landfill. However, if the exemption is not granted, their only option is to decline to receive further material or stockpile what they have.

MWRRG advised that it will work with local governments, transfer stations, and resource recovery centres to identify barriers and opportunities to increasing recovery of e-waste, and monitor quantity and quality to determine if a future collective contract could be implemented.

### Education

After holding workshops with 69 of the state's 79 councils, SV has developed statewide e-waste campaign materials and tools to support councils to rollout the campaign. This includes grants of \$10 000 per council to support local delivery. The production of statewide materials that can be adapted by local councils is an efficient model for education campaigns.

The 2017 *Managing e-waste in Victoria Policy Impact Assessment* notes that a comprehensive and ongoing education campaign will be critical to help Victorians understand their obligations under the ban. SV's commissioned research found that most Victorians do not know what e-waste is or how to safely dispose of it. However, the government allocated SV and councils a one-off budget (with no ongoing funding) that is 25 per cent less than the e-waste Policy impact assessment estimated was needed to deliver the campaign. SV is yet to determine whether this funding will be enough to provide effective ongoing education.



# Appendix A

## *Audit Act 1994* section 16— submissions and comments

We have consulted with the four agencies and two councils included in the audit, and we considered their views when reaching our audit conclusions. As required by section 16(3) of the *Audit Act 1994*, we gave a draft copy of this report, or relevant extracts, to those agencies and asked for their submissions and comments. We also provided a copy of the report to the Department of Premier and Cabinet.

Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

Responses were received as follows:

Banyule Council .....	92
Monash Council .....	93
DELWP .....	94
EPA .....	100
MWRRG .....	105
SV .....	107

**RESPONSE provided by the Acting CEO, Banyule Council**



PO Box 94, Greensborough VIC 3088

T (03) 9490 4222

enquiries@banyule.vic.gov.au

ABN 16 456 814 549

27 May 2019

Victorian Auditor-General's Office  
Level 31 / 35 Collins Street  
Melbourne VIC 3000

Attn: Andrew Greaves

Dear Andrew,

**Re: Proposed Performance Audit Report: Recovering and Reprocessing Resources from Waste**

I am responding to your letter of 14 May 2019 inviting comment on the proposed audit report.

I acknowledge and support the report's conclusion, findings and recommendations including that Banyule is fulfilling its role in delivering waste and resource recovery services to its community.

As Banyule has a Waste Management Plan Vision of "a community motivated to achieve zero waste to landfill by 2030" I am hopeful the audit report becomes a foundation stone for State Government action to improve resource recovery and reprocessing in Victoria.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Geoff Glynn", with a long horizontal flourish extending to the right.

**Geoff Glynn**  
Acting CEO  
Banyule City Council



banyule.vic.gov.au

**RESPONSE provided by the Mayor, Monash Council**



D19-244560

22 May 2019

Mr Andrew Greaves  
Auditor-General  
Victorian Auditor-General's Office  
Level 31/35 Collins Street  
MELBOURNE VIC 3000

Dear Mr Greaves

**PROPOSED PERFORMANCE AUDIT REPORT RECOVERING AND REPROCESSING RESOURCES FROM WASTE**

Firstly, thank you for the opportunity provided to Monash Council to participate in the VAGO audit on Recovering and Reprocessing resources from waste. It is a topic of great importance, particularly given recent developments in recycling and increasing awareness in our community.

The focus and findings of the Audit have identified clear improvement opportunities in the areas of waste planning and policy, support and resourcing, data management and behaviour change education. It is envisaged that the recommendations contained in the report will lead to greater opportunities for State Government agencies responsible for these areas to provide leadership and work more closely with Monash and other Victorian Councils to improve recycling recovery and reprocessing opportunities in Victoria.

The thorough manner in which this audit was planned, conducted and delivered and the level of consultation with Monash Council staff was welcomed. It is also good to see that ideas and feedback provided by Monash Council have been incorporated into the final report.

I look forward to seeing the implementation of the recommended actions contained in the report and of course, we will endeavour to provide any assistance as appropriate.

Should you require any further assistance, please contact Ossie Martinz, on 9518 3701, or email [Ossie.Martinz@monash.vic.gov.au](mailto:Ossie.Martinz@monash.vic.gov.au).

Yours sincerely

A handwritten signature in black ink that reads 'Shane McCluskey'.

CR SHANE McCluskey  
Mayor

293 Springvale Road (PO Box 1) Glen Waverley VIC 3150 **Web** [www.monash.vic.gov.au](http://www.monash.vic.gov.au) **Email** [mail@monash.vic.gov.au](mailto:mail@monash.vic.gov.au)  
**T** (03) 9518 3555 **F** (03) 9518 3444 **National Relay Service** (for the hearing and speech impaired) 1800 555 660  
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廣東話 9321 5481 Italiano 9321 5483 普通话 9321 5485 Việt Ngữ 9321 5487

**RESPONSE provided by the Secretary, DELWP**



**Department of Environment,  
Land, Water and Planning**

PO Box 500, East Melbourne,  
Victoria 8002 Australia  
[delwp.vic.gov.au](http://delwp.vic.gov.au)

Ref: SEC014165



Mr Andrew Greaves  
Auditor-General  
Victorian Auditor-General's Office  
Level 31, 35 Collins Street  
MELBOURNE VIC 3000

Dear Mr Greaves *Andrew,*

**PERFORMANCE AUDIT - PROPOSED REPORT RECOVERING AND REPROCESSING  
RESOURCES FROM WASTE**

Thank you for your letter dated 14 May 2019 providing the Department of Environment, Land, Water and Planning with an opportunity to respond to the proposed report for the performance audit on 'Recovering and reprocessing resources from waste'.

I understand you are seeking a response from the department that sets out what actions will be taken in relation to the recommendations in the proposed report, and when those actions will be completed. The department's response and proposed action plan is attached.

Should you require further information in relation to the matters raised, please contact Ian Campbell-Fraser, Director Waste, Resource Recovery and Governance on 9637 8412 or email [ian.campbell-fraser@delwp.vic.gov.au](mailto:ian.campbell-fraser@delwp.vic.gov.au).

Thank you again for writing.

Yours sincerely

**John Bradley**  
Secretary

*27/5/19*

Any personal information about you or a third party in your correspondence will be protected under the provisions of the Privacy and Data Protection Act 2014. It will only be used or disclosed to appropriate Ministerial, Statutory Authority, or departmental staff in regard to the purpose for which it was provided, unless required or authorized by law. Enquiries about access to information about you held by the Department should be directed to [foi.unit@delwp.vic.gov.au](mailto:foi.unit@delwp.vic.gov.au) or FOI Unit, Department of Environment, Land, Water and Planning, PO Box 500, East Melbourne, Victoria 8002.



**RESPONSE provided by the Secretary, DELWP—continued**

OFFICIAL - Sensitive

**Department of Environment, Land, Water and Planning action plan to address recommendations from *Recovering and reprocessing resources from waste***

No.	VAGO recommendation	Action	Completion date
	We recommend that the Department of Environment, Land, Water and Planning (DELWP), in collaboration with waste portfolio agencies including Sustainability Victoria (SV), the Environment Protection Authority (EPA), the Metropolitan Waste and Resource Recovery Group (MWRRG), regional waste and resource recovery groups, and councils:		
1.1	include in its overarching statewide waste policy: <ul style="list-style-type: none"> <li>strategies for waste avoidance</li> </ul>	DELWP accepts the recommendation. The circular economy policy and action plan (currently being developed in accordance with the commitment made in the <i>Recycling Industry Strategic Plan</i> ), will include strategies to reduce waste generated by households and businesses, building on the waste avoidance strategies included in the <i>Statewide Waste and Resource Recovery Infrastructure Plan</i> and <i>Victorian Waste Education Strategy</i> .	2020
1.2	include in its overarching statewide waste policy: <ul style="list-style-type: none"> <li>specific actions to achieve identified objectives, noting responsible agencies and timelines</li> </ul>	DELWP accepts the recommendation. Similar to the approach taken in the <i>Recycling Industry Strategic Plan</i> , the circular economy policy will be accompanied by a 10-year action plan that will include targets and allocate timelines and responsible agencies for specific actions.	2020

**RESPONSE provided by the Secretary, DELWP—continued**

OFFICIAL - Sensitive

No.	VAGO recommendation	Action	Completion date
1.3	include in its overarching statewide waste policy: <ul style="list-style-type: none"> <li>an evaluation framework specifying performance measures and targets linked to objectives</li> </ul>	DELWP accepts the recommendation. Similar to the approach taken in the <i>Recycling Industry Strategic Plan</i> , DELWP is developing an evaluation framework that will measure and report on progress towards circular economy policy objectives, and action plan goals and targets.	2020
1.4	include in its overarching statewide waste policy: <ul style="list-style-type: none"> <li>a plan to publicly report on progress of implementation and the achievement of outcomes against identified objectives.</li> </ul>	DELWP accepts the recommendation. In developing the circular economy policy evaluation framework, DELWP will consider how to publicly report on progress against those objectives, and include this in the framework.	2020
2.1	study, assess and advise the Minister for Energy, Environment and Climate Change on ways to improve waste and resource recovery outcomes including: <ul style="list-style-type: none"> <li>reducing the sector's reliance on international markets for recyclable materials, such as encouraging establishment of local reprocessing and remanufacturing facilities, and improving recycling behaviours.</li> </ul>	DELWP accepts the recommendation. DELWP is overseeing work by the Victorian Government waste portfolio to deliver actions in the <i>Recycling Industry Strategic Plan</i> and will continue to advise the Minister on options to develop markets for recycled materials.	July 2021
2.2	study, assess and advise the Minister for Energy, Environment and Climate Change on ways to improve waste and resource recovery outcomes including: <ul style="list-style-type: none"> <li>effective market interventions for recovered resources, for example, government procurement targets for recyclable materials</li> </ul>	DELWP accepts the recommendation. DELWP is overseeing work by the Victorian Government waste portfolio to deliver actions in the <i>Recycling Industry Strategic Plan</i> and will continue to investigate and advise the Minister on options to increase demand for recycled content and products through public sector procurement, consistent with the Victorian Government's sustainable procurement framework.	July 2021

2

**RESPONSE provided by the Secretary, DELWP—continued**

OFFICIAL - Sensitive

No.	VAGO recommendation	Action	Completion date
2.3	<p>study, assess and advise the Minister for Energy, Environment and Climate Change on ways to improve waste and resource recovery outcomes including:</p> <ul style="list-style-type: none"> <li>possible levers to improve recycling of resources from waste, which may include expanded product stewardship arrangements, packaging labelling on products, and a container deposit scheme</li> </ul>	<p>DELWP accepts the recommendation.</p> <p>DELWP will continue to investigate and advise the Minister on these and other options to improve waste and resource recovery outcomes. DELWP is leading the Victorian Government waste portfolio's input into development of a national action plan to deliver the <i>2018 National Waste Policy: Less waste, more resources</i>, which was agreed by Australian Environment Ministers in December 2018. Actions such as improving product stewardship arrangements, and improved packaging labelling are best addressed at a national level. DELWP will continue to advocate for their inclusion in the national action plan.</p>	2020
2.4	<p>study, assess and advise the Minister for Energy, Environment and Climate Change on ways to improve waste and resource recovery outcomes including:</p> <ul style="list-style-type: none"> <li>price signals such as changes to the landfill levy rate and the possible impact of this on recovery rates.</li> </ul>	<p>DELWP accepts the recommendation.</p> <p>DELWP will investigate and advise on the role of price signals (such as the landfill levy) in increasing resource recovery through development of the government's circular economy policy and action plan.</p>	2020

**RESPONSE provided by the Secretary, DELWP—continued**

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No.	VAGO recommendation	Action	Completion date
3	develop, and make public, a document stating the roles and responsibilities—including responsibilities indicated in disparate waste policies and strategies—of all portfolio agencies, local councils and other relevant entities involved in waste management and regulation and communicate this to councils and waste operators	DELWP accepts the recommendation. As noted in the audit report, DELWP has already developed a waste and resource recovery portfolio roles and responsibilities document. DELWP will develop a version of this document suitable for publication on its website and bring its existence to the attention of local government and industry stakeholders.	Complete
4	support the MWRRG in its capacity building initiatives to train councils' and WRRGs' staff so that they can effectively deliver their respective waste management roles and responsibilities, including for collective procurement, land-use planning, multi-unit developments' waste management, and food organics and garden organics	DELWP accepts the recommendation. DELWP will continue to support all portfolio agencies as required.	Ongoing
5	strengthen the Planning Scheme to ensure MUDs have waste management plans designed and approved in accordance with the Better Practice Guide for Waste Management and Recycling in Multi-unit Developments	DELWP accepts the recommendation. Drawing from guidance in the <i>Better Practice Guide for Waste Management and Recycling in Multi-unit Developments</i> , DELWP is working closely with Sustainability Victoria to review the Waste and Recycling objectives for Apartments and other forms of multi-unit developments in the <i>Victoria Planning Provisions</i> (VPP).	Q4 2019

**RESPONSE provided by the Secretary, DELWP—continued**

OFFICIAL - Sensitive

No.	VAGO recommendation	Action	Completion date
6.1	<p>advise the Minister for Energy, Environment and Climate Change on options to divert organic waste from landfill, including:</p> <ul style="list-style-type: none"> <li>maximising the collection of organic waste from commercial and industrial (C&amp;I) establishments</li> </ul>	<p>DELWP accepts the recommendation.</p> <p>Reducing and better managing organic waste are key principles of a circular economy. DELWP will investigate and advise on options to improve organic waste management through development of the circular economy policy and action plan. This will include options to efficiently improve management of commercial and industrial organic waste, with consideration of economic and environmental impacts.</p>	2020
6.2	<p>advise the Minister for Energy, Environment and Climate Change on options to divert organic waste from landfill, including:</p> <ul style="list-style-type: none"> <li>the required resources to support the rollout of food organics and garden organics kerbside collections for all local governments.</li> </ul>	<p>DELWP accepts the recommendation.</p> <p>Through development of the government's circular economy policy and action plan, DELWP will investigate and advise on actions to improve management of organic waste in Victoria. This will include options to efficiently support kerbside organics collections for local governments, with consideration of economic and environmental impacts.</p>	2020

Our Ref: MA008133

Mr Andrew Greaves  
Auditor-General  
Victorian Auditor-General's Office  
L31, 35 Collins Street  
MELBOURNE VIC 3000

Dear Mr Greaves

**Proposed Performance Audit Report, Recovering and Reprocessing Resources from Waste**

Thank you for your letter of 14 May 2019 regarding the VAGO Performance Audit Report and recommendations for EPA.

EPA welcomes the recommendations of the report, which will further improve the identification and monitoring of risks arising from waste stockpiles and provide additional oversight of licensed and permitted operators. They complement the reforms already underway to boost EPA's prevention focus and ability to tackle waste issues.

The report also underscores the importance of the work EPA is already doing to address inappropriately managed stockpiles across Victoria. Since August 2017, and following the Coolaroo fire, EPA has had additional powers to support Victoria's fire services and issue remedial notices to facilities not properly managing potential fire risks.

As requested, attached is a plan outlining actions EPA will take in response to each recommendation.

From 1 July 2020, the amended *Environment Protection Act 2017* will strengthen EPA's regulatory powers relating to waste and introduce stronger penalties, including up to \$3.2 million for some offences.

EPA will support the Department of Environment, Land, Water and Planning (DELWP) and Sustainability Victoria on implementing the recommendations relating to their areas of responsibility.

Some of EPA's other actions to improve the identification and monitoring of risks arising from waste stockpiles include:

1. Continuing the work of the Resource Recoveries Facilities Audit Taskforce. The Taskforce will continue work with (EPA, WorkSafe, MFB, CFA, EMV, DELWP and VBA) to audit priority sites to identify stockpiling that poses a fire risk, and to take regulatory action to reduce this risk. More than 550 inspections have been conducted to date.
2. Investing \$5.5m into a new electronic waste tracking system, initially designed to track high risk hazardous waste, to better record the production, movement and receipt of industrial waste and further improve our ability to detect non-compliance.



**Environment  
Protection  
Authority Victoria**

200 Victoria Street  
Carlton VIC 3053

GPO Box 4395  
Melbourne VIC 3001

**DX** 210082

**T** 1300 372 842  
1300 EPA VIC

**W** [epa.vic.gov.au](http://epa.vic.gov.au)

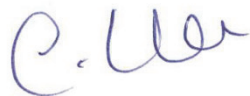


**RESPONSE provided by the Chief Executive Officer, EPA—continued**

3. Sharing data from the new waste tracking system with key Victorian Government agencies and departments to enable a more coordinated and informed approach to managing risks arising from waste.
4. Continuing to inspect licensed and non-licensed industrial sites across Victoria with WorkSafe and other agencies as part of compliance and enforcement programs for hazardous waste and dangerous goods.

The Victorian community has a right to expect that hazardous and industrial waste is managed to a high standard. I can assure you that EPA takes these issues seriously and will hold to account those who do not comply with their obligations under legislation to prevent harm to the environment and community.

Yours sincerely



DR CATHY WILKINSON  
CHIEF EXECUTIVE OFFICER  
ENVIRONMENT PROTECTION AUTHORITY VICTORIA

28/5 /2019

**RESPONSE provided by the Chief Executive Officer, EPA—continued**

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**Environment Protection Authority action plan to address recommendations from  
Recovering and reprocessing resources from waste**

No.	VAGO recommendation	Action	Completion date
1.1	<p>Determine and prioritise key noncompliance and emerging waste risks for targeted action by:</p> <ul style="list-style-type: none"> <li>• putting together and continually updating a publicly available inventory on waste stockpiles/dumps/storage of all waste operators—licensed, permitted or otherwise—detailing location, type of waste or resource, extent (tonnage/volume), responsible parties, action taken and outcomes.</li> </ul>	<p>Accept in principle.</p> <p>EPA’s ability to access increased and richer intelligence, and better identify emerging risks relating to waste operators, will be further enhanced by the following:</p> <ul style="list-style-type: none"> <li>• A significant increase in the number of waste operators requiring a permission (License, Permit or Registration) under the new Environment Protection Legislation. A public register of these sites will be available, as will regulatory notices issued to any sites, permissioned or otherwise.</li> <li>• Building on the inventory of waste stockpiles, identified by the Resource Recovery Audit Taskforce, EPA will use the latest intelligence to better target our regulatory work program to address waste risks. Critical inputs for improved prioritisation include intelligence from: EPA’s new \$5.5 million electronic waste tracking system initially designed for high risk hazardous waste; and EPA’s \$6.3 million Illegal Waste Disposal Strikeforce designed to reduce illegal dumping of industrial waste in Victoria.</li> </ul>	July 2020

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**RESPONSE provided by the Chief Executive Officer, EPA—continued**

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1.2	Determine and prioritise key noncompliance and emerging waste risks for targeted action by: <ul style="list-style-type: none"> <li>developing and implementing a prioritised action plan to clean up or require the clean-up of identified waste risks.</li> </ul>	<p>Accept in principle.</p> <p>The Resource Recovery Facilities Audit Taskforce has determined and prioritised key noncompliance and emerging waste issues based on risk and this has informed the current inspection program.</p> <p>EPA will release a revised regulatory strategy and regulatory workplan which outlines its key priorities based on risk.</p>	September 2020
2	Prepare and implement a prioritised action plan to oversight the waste activities of licensed and permitted waste operators to ensure compliance with their licence or permit conditions, including on the quantity and manner of storage of waste and resources.	<p>Accept in principle</p> <p>EPA Licence Compliance Assessment Inspection Program prioritises Licensed sites for inspection using a risk assessment methodology. This will continue to be refined based on new intelligence and inspection findings.</p> <p>Building on our existing risk-based oversight program, EPA will further improve our oversight of waste operators under the expanded permissioning framework under the new Environmental Protection legislation.</p> <p>Victorian Government has made a \$6.3m investment toward the Illegal Waste Disposal Strikeforce, led by EPA, to deliver a program of compliance and enforcement, behaviour change and knowledge development activities to reduce illegal dumping of industrial waste in Victoria.</p>	September 2020
3	Improve its monitoring and enforcement record management to allow a clear assessment of the effectiveness of its actions.	<p>Accept</p> <p>EPA's Digital Transformation includes complementary technology projects that will enhance digital field service capability, improving electronic data records management and bolstering analytics capability to enable qualitative assessment of regulatory outcomes.</p> <p>Victorian Government has made a \$5.5m investment to implement a fully electronic tracking system to better record the production, movement and receipt of industrial waste. The new system will enable EPA to monitor the movement of higher risk</p>	December 2021

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**RESPONSE provided by the Chief Executive Officer, EPA Victoria—continued**

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		<p>hazardous waste more accurately to deliver insights on sector activity, trends and highlight potential illegal activity.</p> <p>EPA's Transformation Program includes a range of projects and initiatives aimed at improving its monitoring and enforcement record management through uplift to people, process and technology.</p> <p>EPA's Regulatory Excellence Program will strengthen the accuracy and quality of compliance and enforcement operational data through a comprehensive re-build of policies, procedures, training and assurance.</p>	
4	<p>Review and advise the Minister for Energy, Environment and Climate Change on the need to revise its existing regulatory instruments and regulatory processes against more stringent arrangements in other jurisdictions, including South Australia and New South Wales—for example on stockpile management, reporting on waste data, licensing of waste operators and tracking of hazardous wastes.</p>	<p>Accept</p> <p>The MAC Inquiry 2016 examined and reviewed the role, powers and tools, governance arrangements and resourcing of the EPA. The Victorian Government supported in full or in part all 48 recommendations made by the Inquiry and as a result the EP Act was overhauled with a preventative focus, new powers and increased deterrents, including new duties for waste. The new Environment Protection Act comes into effect on 1 July 2020.</p> <p>EPA and DELWP are working in partnership to develop the regulatory instruments to support the new Act, taking into account the arrangements in other jurisdictions for waste, as well as new initiatives to prevent and manage waste problems into the future.</p> <p>New regulatory instruments, including new and enhanced instruments for waste, will be prepared for Minister's approval and commence in 2020.</p>	July 2020

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**RESPONSE provided by the Chair, MWRRG**



28 May 2019

Mr Andrew Greaves  
Auditor-General  
Victorian Auditor-General's Office

Dear Mr Greaves

**RE: Proposed Performance Audit Report Recovering and reprocessing resources from waste**

Thank-you for providing MWRRG with the Proposed Report for final comments, and reviewing the matters raised in our response to the provisional report for your consideration.

Overall, we are pleased with how the report provides an evidenced based view of the challenges the waste recovery sector has faced over recent years, including recommended increased support to our organisation to deliver upon the support and capability building needs in local government. We accept the recommendations directed at us and have outlined the actions we intend to implement below. We propose some minor refinement to the first recommendation as MWRRG are already in the process of implementing this action.

We look forward to liaising with your staff periodically to help monitor our progress in implementing the audit recommendations. Should you require further information please contact myself or Rob Millard, CEO MWRRG.

Yours sincerely

Cr Colleen Gates  
Chair MWRRG

CC: Rob Millard CEO MWRRG

**RESPONSE provided by the Chair, MWRRG—continued**



**Metropolitan Waste and Resource Recovery Group action plan to address recommendations from *Recovering and reprocessing resources from waste***

No.	VAGO recommendation	Action	Completion date
1	review and revise the infrastructure capacity analysis in the <i>Metropolitan Waste and Resource and Recovery Implementation Plan</i> to plan and prepare for current and future waste infrastructure needs for metropolitan Melbourne	<b>Agreed</b> The scheduled review of the MWRRIP 2016 will incorporate infrastructure capability analysis. Publicise report on the review including recommendations to meet future waste infrastructure needs. MWRRIP will update the Plan as necessary and in accordance with all statutory expectations.	Review commenced March 2019  Report end 2019 Published early 2020 Revised Plan by 2021
2	develop and implement action plans to improve the recovery of resources from commercial and industrial waste	<b>Agreed</b> Finalise C&I Strategy (3 year) Finalise C&I Project plan 19/20 focussing on recovery of plastics and food waste. MWRRG would require additional resources through budget bids.	Reported through MWRRG Annual Report and case studies. Budget bid cycle May 2020.
3	expand its capacity building initiatives to support councils in developing the skills of staff to plan and deliver waste services	<b>Agreed</b> Finalise 2019-2021 Business Plan to enhance activities to deliver training and capacity building in Advanced Waste Processing, land-use planning, FOGO MUDs, Illegal dumping. MWRRG would require additional resources through budget bids.	Business Plan approved by 30 June 2019. Reported through MWRRG Annual Report and monthly newsletters. Budget bid cycle May 2020.
4	develop an evaluation and monitoring framework to effectively monitor, evaluate and report on progress and outcomes of its waste instruments, for example the <i>Metropolitan Waste and Resource and Recovery Implementation Plan</i> and the <i>Commercial and Industrial Waste Strategy</i> , ensuring that each has targets based on sound evidence and assumptions, performance measures and regular public reporting on individual action items and the objectives identified in waste instruments	<b>Agreed</b> Develop agreed Evaluation Framework with SV and WRRGs to apply consistently across all state-wide and regional plans.	Framework developed by end June 2020 to be implemented under Revised plan 2021.

## RESPONSE provided by the Chair, SV

27 May 2019

Andrew Greaves  
Auditor-General  
Victorian Auditor-General's Office  
Level 24, 35 Collins Street  
MELBOURNE 3000



Level 28  
Urban Workshop  
50 Lonsdale Street  
Melbourne VIC 3000

[sustainability.vic.gov.au](http://sustainability.vic.gov.au)  
Twitter: @susvic  
ABN 62 019 854 067

Dear Auditor-General

I am writing in response to your audit on Recovering and reprocessing resources from waste.

Sustainability Victoria (SV) acknowledges the report and its recommendations and we have commenced planning and implementation on a range of measures to respond to the audit findings. As an organisation, we are committed to continuous improvement and ensuring that we are providing high-quality outcomes for Victoria. The audit findings will further focus our work and help guide the development of our next strategic plan.

Since the last audit into Municipal Solid Waste in 2011, SV has undertaken significant reforms to improve programs and investment in Victoria's waste and resource recovery sector. In 2016, we released the Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP), a first-of-its-kind document that provides a 30-year horizon for waste and resource recovery infrastructure in the state. Several other states and territories have followed Victoria's lead in developing long-term infrastructure plans. Despite the speed and scale of population growth in Victoria, our resource recovery rate is the second highest in Australia, with more than 2,000,000 tonnes of annual recycling capacity added in the past 10 years.

An independent report into SV programs conducted by ACIL Allen in 2017 found that SV has demonstrated a strong strategic focus on maximising its impact to build viable long-term industries as a foundation for a sustainable economy. The review showed a cost benefit of 1:2.49 across five of SV's major programs since 2011, generating \$248.4 million in total present value benefits to Victoria from an investment of \$28.6 million. For example, the Driving Investment in New Recycling infrastructure fund returned nearly \$20 in economic benefit to the community from every \$1 spent.

SV's current waste and resource recovery programs under the Recycling Industry Strategic Plan focus on building a circular economy in Victoria, bringing together investment in infrastructure, development of new markets for recycled materials and community education. These programs are delivering large-scale structural change in the sector. Since 1 July 2017, SV has awarded \$28 million in grants to the waste and resource recovery sector, which is expected to leverage a further \$75 million in investment in the sector. These investments are anticipated to increase capacity for resource recovery by nearly 2 million tonnes per annum.

Victorians remain committed to recycling, with almost 90% believing that recycling is important to protect the environment and that we all have a responsibility to put the right items in the right bin. For the first time, SV will soon commence rolling out a state-wide recycling campaign, investing \$3 million and working in partnership with industry, councils and waste and resource recovery groups to target key recycling behaviours and contaminants.

A sustainable recycling sector needs to be underpinned by strong end markets for recovered materials. SV has been working in the market development space for more than 10 years, removing barriers that restrict sale of recycled products and materials. Victoria now has a complement of 6 dedicated specifications for the use of recycled concrete, brick, tyre rubber and glass in Victorian roads. Since the impact of the China import restrictions, SV has reprioritised its market development activities on plastics and kerbside recyclables, with an additional \$1.2 million fund currently in market for research, development and demonstration projects.



**RESPONSE provided by the Chair, SV—continued**



In light of the current global issues impacting the recycling sector, SV welcomes the opportunity for critical reflection on our program delivery in this area. SV commits to continue working with other portfolio agencies - DELWP, EPA, MWRRG and regional WRRGs - in achieving the recommendations from the audit report to further develop and improve Victoria's waste and resource recovery system.

I note that SV has responsibility for eight of the recommendations. Please find attached the actions SV proposes to acquit these recommendations. I welcome your staff following up periodically to monitor our progress in implementing the audit recommendations.

Yours sincerely

A handwritten signature in black ink that reads 'Heather J. Campbell'.

Heather Campbell  
**Chair**  
Sustainability Victoria

**RESPONSE provided by the Chair, SV—continued**



***Sustainability Victoria action plan to address recommendations from Recovering and reprocessing resources from waste***

Recommendations	Agreed Actions	Indicative Date
<b>Recommendation 1</b> Update the Statewide Waste and Resource Recovery Infrastructure Plan (SWRRIP), Victorian Organics Resource Recovery Strategy (VORRS), Market Development Strategy (MDS), Waste Education Strategy (WES) and Waste Data Governance Framework, having regard to changes in market conditions and community expectations and identifying outstanding actions and clearly outlining priorities for the future	<b>SV accepts this recommendation</b> SV has commenced work to review implementation activities for all strategies and targeted implementation plans that identify current priorities and outstanding actions are being developed. However, SV will not undertake full updates of the strategies until the Circular Economy Policy has been finalised as it is likely that large parts of the strategies will be superseded by the new policy.	June 2020
<b>Recommendation 2</b> Ensure that the infrastructure capacity analysis of waste and resource recovery groups' Waste and Resource and Recovery Implementation Plans are up to date and allow regional councils to plan and prepare for their current and future waste infrastructure needs	<b>SV accepts this recommendation</b> SV will undertake a full statewide infrastructure capacity analysis for both landfills and resource recovery infrastructure in 2019/20. This will support both the SWRRIP and all regional implementation plans.	June 2020
<b>Recommendation 3</b> Develop a clear business case for the SWRRIP VORRS, MDS, WES and Waste Data Governance Framework, and submit to government a funding proposal to deliver on identified priorities and implementation plans	<b>SV accepts this recommendation</b> Upon completion of the review of each strategy and the release of the Circular Economy Policy, SV will work with DELWP to ensure business cases are developed for funding for all key priorities and implementation activities, either through the implementation of the policy itself or separately if required.	December 2020
<b>Recommendation 4</b> Deliver a sustained statewide recycling campaign, with local delivery models, to enable improved behaviours over time—including waste avoidance and recycling food waste	<b>SV accepts this recommendation</b> SV is currently designing a 3-year statewide recycling campaign with local delivery models that will target improved household behaviours.	August 2019 - 2022
<b>Recommendation 5</b> Develop and implement an evaluation framework for the SWRRIP, VORRS, MDS, WES and Waste Data Governance Framework including targets based on sound evidence and assumptions, performance measures and regular public reporting on the achievement of outcomes	<b>SV accepts this recommendation</b> SV has commenced work on an updated and expanded evaluation framework for key waste and resource recovery strategies. In the short term, this will focus on current implementation priorities until the scope of the Circular Economy Policy becomes clearer.	June 2020
<b>Recommendation 6</b> Improve the quality and reliability of state waste data by: <ul style="list-style-type: none"> <li>working with DELWP, EPA, WRRGs and councils to (i) identify categories of waste data that are critical for government planning and decision-making and (ii) develop an action plan to obtain complete, accurate and reliable data, including where appropriate mechanisms for mandatory data collection from councils, waste transfer stations, recovery and reprocessing operators, and other holders of relevant waste information whether public or private</li> <li>completing its implementation of the recommendations from its 2014 waste needs and gap analysis, including releasing an updated <i>Data and Reporting Guideline for Waste Management Facilities</i> and driving its effective implementation across the state</li> <li>improving guidance and support for annual data surveys to</li> </ul>	<b>SV accepts these recommendations</b> SV has commenced developing a new Data Roadmap for waste and resource recovery data in Victoria. The Roadmap will include operational, strategic and data infrastructure improvements that will address the definitional and categorisation issues outlined in the audit report. Once completed, a business case will be developed to seek funding for the implementation of the Data Roadmap, including opportunities for stronger requirements for data provision from the industry and local government. As part of the implementation of the Roadmap, new and improved guidance material will be prepared to support councils and operators of resource recovery facilities in	June 2020

**RESPONSE provided by the Chair, SV—continued**



<p>help councils and waste operators in providing more accurate and reliable waste data</p> <ul style="list-style-type: none"> <li>reporting clearly on waste data in its Victorian Local Government Waste Services Report and Victorian Recycling Industry Annual Report by: <ul style="list-style-type: none"> <li>ensuring waste terminologies and definitions are consistent, including a glossary of terms for each report, and ensuring their appropriate and consistent use across the two reports</li> <li>clearly articulating the nature of data being presented and where appropriate clarifying the difference between the data reported in both reports</li> <li>correcting references to the 'recycled' portion of collected municipal solid waste recyclables in the Victorian Local Government Waste Services Report, including in online copies of past reports</li> </ul> </li> </ul>	<p>completing the surveys and improving data consistency.</p> <p>We will include a glossary of terms in each annual report. We have already made changes to references to "recycling" in current data reports. Past reports are not available online on SV's website as each year's report supersedes the previous year's report.</p>
<p><b>Recommendation 7</b></p> <p>Work with the Metropolitan Waste and Resource Recovery Group and regional waste and resource recovery groups to provide better support to councils in rolling out food organics and garden organics collection services</p>	<p><b>SV accepts this recommendation</b> June 2020</p> <p>SV and MWRRG have commenced discussions on how best to support councils in the roll out of FOGO services. SV has identified a small amount of funding that will be used to support 2 – 4 regional councils in establishing FOGO services. Further funding will be sought through the Circular Economy Policy.</p>
<p><b>Recommendation 8</b></p> <p>Work with the Metropolitan Waste and Resource Recovery Group, councils and regional waste and resource recovery groups to establish a working group or community of practice to better collaborate and reduce inefficiencies in waste education</p>	<p><b>SV accepts this recommendation</b> Commenced by December 2019</p> <p>SV will work with councils and WRRGs to establish a community of practice and share knowledge and waste education approaches.</p>

# Auditor-General's reports tabled during 2018–19

Report title	Date tabled
Local Government Insurance Risks (2018–19:1)	July 2018
Managing the Municipal and Industrial Landfill Levy (2018–19:2)	July 2018
School Councils in Government Schools (2018–19:3)	July 2018
Managing Rehabilitation Services in Youth Detention (2018–19:4)	August 2018
Police Management of Property and Exhibits (2018–19:5)	September 2018
Crime Data (2018–19:6)	September 2018
Follow up of Oversight and Accountability of Committees of Management (2018–19:7)	September 2018
Delivering Local Government Services (2018–19:8)	September 2018
Security and Privacy of Surveillance Technologies in Public Places (2018–19:9)	September 2018
Managing the Environmental Impacts of Domestic Wastewater (2018–19:10)	September 2018
Contract Management Capability in DHHS: Service Agreements (2018–19:11)	September 2018
State Purchase Contracts (2018–19:12)	September 2018
Auditor-General's Report on the Annual Financial Report of the State of Victoria: 2017–18 (2018–19:13)	October 2018
Results of 2017–18 Audits: Local Government (2018–19:14)	December 2018
Professional Learning for School Teachers (2018–19:15)	February 2019
Access to Mental Health Services (2018–19:16)	March 2019
Outcomes of Investing in Regional Victoria (2018–19:17)	May 2019
Reporting on Local Government Performance (2018–19:18)	May 2019
Local Government Assets: Asset Management and Compliance (2018–19:19)	May 2019
Compliance with the Asset Management Accountability Framework (2018–19:20)	May 2019
Security of Government Buildings (2018–19:21)	May 2019

Security of Water Infrastructure Control Systems (2018–19:22)	May 2019
Security of Patients’ Hospital Data (2018–19:23)	May 2019
Results of 2018 Audits: Universities (2018–19:24)	May 2019
Results of 2018 Audits: Technical and Further Education Institutes (2018–19:25)	May 2019
Child and Youth Mental Health (2018–19:26)	June 2019



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[www.audit.vic.gov.au](http://www.audit.vic.gov.au)

Victorian Auditor-General's Office  
 Level 31, 35 Collins Street  
 Melbourne Vic 3000  
 AUSTRALIA

Phone +61 3 8601 7000  
 Email [enquiries@audit.vic.gov.au](mailto:enquiries@audit.vic.gov.au)