



URBAN EP

Feasibility Study into a Statewide Waste Management Arrangement

Part A Long report – Needs and benefits study

Prepared for

Local Government Association of Tasmania

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Feasibility study into a Statewide Waste Management Arrangement for Tasmania – Part A

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Client: Local Government Association of Tasmania

Client contact: Dion Lester, Policy Director

Author

Urban Elements & Practice Pty Ltd

ABN 41 164 939 968

Clifton Hill Victoria 3068

Phone: +61 432 391 835

nathan.toovey@urbanep.com.au

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List of acronyms

CCA	Cradle Coast Authority
CCWMG	Cradle Coast Waste Management Group
CDL	Container Deposit Legislation
DPIPWE	Department of Primary Industries, Parks, Water and Environment (Tasmania)
EPA	Environment Protection Authority (of Tasmania, unless otherwise stated)
ILM	Investment Logic Map
LGAT	Local Government Association of Tasmania
NTDC	Northern Tasmania Development Corporation
NTWMG	Northern Tasmania Waste Management Group
STCA	Southern Tasmanian Councils Authority
SV	Sustainability Victoria
WSS	Waste Strategy South

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Executive Summary

The Local Government Association of Tasmania (LGAT) has engaged Urban EP to undertake a feasibility study for a Statewide Waste Management Arrangement. This arrangement would potentially cover the planning, co-ordination and delivery of waste policies, strategies, programs and services to support better waste management across the state of Tasmania, and address market failures evident in how waste is managed across the state.

The study is to be delivered in two parts:

Part A: Collate evidence and present findings on the needs for and benefits of a Statewide Waste Management Arrangement ('statewide arrangement').

Part B: Develop the purpose, role, functions and governance apparatus of this statewide arrangement as necessary for planning, co-ordinating and delivering state-wide waste policies, strategies, programs and services.

This report is concerned with Part A of the feasibility study, with progression to Part B contingent on a decision to continue as informed by findings and recommendations of this report.

Drivers for this work include the view that waste management service levels and outcomes in Tasmania lag behind those of the mainland states and behind the intents articulated in the most recent national waste policy. Consequentially, a broad spectrum of benefits that stem from better waste management remain unrealised in Tasmania. Further, local government stakeholders are uncertain of the timing, scope and ambition of a Tasmanian Waste Action Plan currently under development by the Tasmanian Government, and are therefore seeking to lead the agenda on some areas most relevant to their responsibilities and interests.

Methods

In accordance with the requirements of Part A of the feasibility study, the following methods were adopted in delivering this part of the work plan:

- Engagement with local government, three regional waste authorities, state government and the resource recovery sector on achievements, challenges and priorities
- Review of existing waste management arrangements and trends in Tasmania
- Derivation of potential benefits and scope of functions for a proposed statewide waste management arrangement, that responds to priority concerns and addresses shortfalls in how services are currently being delivered
- Comparison with the arrangements used and/or being developed in nearby locations
- Exploration of ambitions and principles (i.e. to correct market failures and to stimulate the circular economy) to underpin arrangements in Tasmania, and their influence on the balance of functions, benefits and other opportunities for the state.

Main findings

Demand for a statewide arrangement

Five workshops were held with stakeholders including the regional waste management authorities; council officers, executives and elected councillors; representatives from the resource recovery sector; and Tasmanian Government officials with an interest in the area.

Despite affirming local, regional, and state achievements over the years, workshop participants expressed a strong and common view that current waste management arrangements fall short of what may be achieved with the addition of a suitable statewide arrangement. They identified a breadth of areas associated with waste management and resource recovery where this arrangement could respond to challenges and failures, and deliver benefits.

Four problem areas were identified by stakeholders as priorities for the arrangement to attend to and in doing so, bring value to the community and protect the environment:

1. Poor cohesion in the demand for organics recovery services
2. Insecure market for investing in recovery infrastructure
3. Risks and harms incurred by tyre stockpiles and illegal dumping
4. Resource inefficient use of single use plastics and packaging.

The level of stakeholder consensus indicates that benefits will be shared across the island and stakeholder groups rather than accruing to any particular interest groups. This can be re-confirmed during Part B of the feasibility study by further widening the range of stakeholders consulted, as different models for apportioning roles and responsibilities are tested.

Depending on the needs of partners and stakeholders and how they shift in response to the operating landscape, the priorities that the statewide arrangement focuses its efforts on can be re-aligned over time. That is, the above problems are a suggested starting point to build from.

Proposed functions and associated benefits

In pairing findings from the workshops with standard methods that are used to substantiate public investments and commitments, a strong case for statewide action dedicated to the above challenging areas can be made. These areas were used as a basis to scope the initial functions of a statewide arrangement, and characterise the benefits it would deliver.

The proposed approach phases in thirteen functions in sequence over three stages (see diagram overleaf, green box to the right). These functions can be separated into:

1. Functions to support situational awareness and direction setting (Functions 1 to 4), including the means to appraise the current situation and to evaluate outcomes
2. Ongoing core functions to support and influence primary stakeholders (Functions 5 to 10)
3. Dedicated intervention measures that, due to the technical detail, substantial outlays, and impacts on stakeholders during their deployment, require a substantial evidence base and deeper consultation prior to their usage (Functions 11 to 13).

These functions afford an effective means to address waste management and related needs at a state level, while assisting local and regional bodies to continue in their existing roles.

Tasmanian statewide waste management arrangement

Problems to address

1. Poor cohesion in the demand for organics recovery services
2. Insecure market for investing in recovery infrastructure
3. Risks and harms incurred by tyre stockpiles and illegal dumping
4. Resource-inefficient use of single use plastics and packaging
- ... plus others to be agreed with waste management partners

Benefits

Enhance Tasmania's image

Positive culture towards waste management and 'faith in the system'

Climate change tackled through local solutions

Tasmania seen as valuing its natural assets

Narrative to attract visitors, residents, investors

Tasmania as a leader in tackling problem wastes

Government delivering on expectations to help people lead lower impact lifestyles & businesses

Protect health & the environment

Effective prevention & inhibition of littering, dumping and stockpiling

Cleaner & safer environment due to less illegal dumping & litter

Low reliance on landfills - lower landfill impacts including gas emissions, leachate, odour and amenity impacts

Greater self assurance in how to recycle

Soil quality improved using locally recovered material

Efficient resource use embedded in consumer decisions

Foster economic development

Natural assets retain value and are untarnished

Brands that rely on a clean image of Tasmania retain market credibility

Resources are recovered and used, in line with the scale of opportunity

Efficient private & public investment in recovery infrastructure and jobs

Efficient service prices that reflect demand over time

Strong local markets for recovered resources

Lower costs & risks borne by the recovery chain

Functions

1. **Vision statement** for waste management / circular economy in Tasmania, linked to a **credible commitment** to take action.
2. **Statewide infrastructure & service planning** and scheduling.
3. **Development of strategies for priority items**, including:
 - organics from municipal and commercial sources
 - end of life tyres
 - single use plastics and non-recyclable packaging
 - others identified as a priority for Tasmania.
4. **Statewide data collection, analytics and reporting:**
 - tracking and investigating illegal dumping incidents
 - volume of waste generated and services demanded at statewide & regional scales
 - projection of capacity needs for infrastructure and services
 - to inform preferred interventions to problem materials.
5. **Governance and collaboration models** to engender trust & commitment:
 - to support surveillance & remediation of dumping sites
 - to build certainty for new services & assets to come online.
6. **Local government engagement and procurement support** to lock in demand for new services and facilitate efficient use of assets.
7. **Coordinated education, engagement and marketing:**
 - to ostracise illegal dumping and encourage reporting
 - to foster acceptance and uptake of new recovery services
 - to stimulate demand for recovered resources
 - to support best practice in local and regional services
 - to guide consumer & purchasing behaviours and decisions.
8. **Statewide enforcement and prosecution** of stockpiling in breach of licence conditions, and illegal dumping.
9. **Market development measures including sustainable procurement:**
 - to stimulate markets for resources recovered locally
 - to foster the replacement of non-recyclable and single use items with reusable / recyclable / recycled content items.
10. **Coordinated advocacy and policy input** at the national level, where national solutions are deemed to be more effective.
11. **Product stewardship of priority items** including product re-design and takeback arrangements (e.g. CDL)- *pending examination of net benefit.*
12. **Infrastructure funding** to stimulate investment in recovery assets
 - *Pending private investment gap analysis & case for public funding.*
13. **Market and/or statutory instruments** (e.g. levies, bans from landfill) to address gate fee differentials
 - *Pending an analysis of gap between gate fees for new services and willingness to pay above existing landfill rates.*

As shown in the above diagram (in blue, lower left corner) the arrangement has the opportunity to deliver multiple benefits across Tasmania's reputation, human health and the environment, and in stimulating economic development.

Whether the arrangement maximises these benefits rests upon the ambition, vision and commitment of partners invested in its implementation. A strong adoption of circular economy principles, while also attending to waste management standards and practices and correcting market failures, would help to achieve benefits for Tasmania. Resourcing of the arrangement and related activities should be commensurate with the problems and opportunities at hand.

Alignment with broader directions across Australia

The functions and priorities for the statewide arrangement (as described above) are consistent with the *National Waste Policy 2018*, and with details of the Tasmanian Waste Action Plan (in development) to the extent that these details have been made available.

The proposed arrangement is consistent with the direction of all the mainland Australian states (see table overleaf for a summary of functions adopted or proposed for each location).

- South Australia (2015-16 recycling rate of 78 %), Victoria (68 %) and New South Wales (59 %) have had similar functions in place since 2014-15, and are leading the country in terms of resource recovery rates.
- Western Australia (53 %) and Queensland (44 %), two traditional 'laggards' compared with the other mainland states, are now moving towards recycling targets of 75 %. They are expected to have expanded Waste and Resource Recovery Strategic Plans and arrangements in place by the end of 2019 (Western Australia is finalised; Queensland is in public draft stage), with a strong commitment to circular economy approaches.

New Zealand is also a useful comparison in terms of what it is not doing, its limited recycling performance (i.e. a recycling rate of 28 %), and the level of criticism this has attracted. Current statewide arrangements in Tasmania arguably have more in common with New Zealand's current national arrangements than they have with the direction of other mainland states in Australia.

It is additionally useful to look at the level of public resources committed in each state. Public investment in improving waste management in Tasmania via the regional authorities (using landfill levies and council budget allocations paid to regional authorities) is presently around \$1.1 million per year. This is in lieu of an ongoing state government budget dedicated to waste management related matters. Allowing for differences in the volume of waste generated in each state and in New Zealand, this \$1.1 million is substantially less than the state government outlays provided by all mainland Australian states and national outlays implemented by the New Zealand Government.

For example, if the mainland states carried their current (or in Queensland's case, proposed) funding models across to Tasmania, and adjusted for Tasmanian volumes of waste to landfill, they would be investing between \$6.4 million and \$21 million in a statewide arrangement and its activities each year. That is, between six and twenty times the present level of investment via the regional authorities. (While Western Australia's investment would equate to \$5.5. million, it is presently reviewing its landfill levy and funding settings on the basis that they may not sufficiently support the new waste strategy.)

This disparity suggests that in pursuing a functionally effective statewide arrangement, the scope of activities and level of investment are both critical to achieving a meaningful contribution to achieve the benefits for Tasmania (as set out in the diagram).

	Tasmania <i>proposed</i>	Western Australia	South Australia	Victoria	New South Wales	Queensland <i>from 1/7/19</i>	New Zealand
Timeframe of present strategy / plan	n/a	2019 – 2030	2015 – 2020	2015 – 2025	2014 – 2021	2019 – 2050	2010 onward
Vision statement	✓	✓	✓	✓	✓	✓	✗
Strategies developed for priority areas	✓	✓	✓	✓	✓	✓	✗
Statewide infrastructure and service plan	✓	✓	✓	✓	✓	✓	✗
Data collection, reporting and analytics	✓	✓	✓	✓	✓	✓	✗
Governance and collaboration models	✓	✓	✓	✓	✓	✓	✗
Council engagement & procurement support	✓	✓	✓	✓	✓	✓	✗
Coordinated engagement & education	✓	✓	✓	✓	✓	✓	✓
Statewide enforcement & prosecution	✓	✓	✓	✓	✓	✓	✓
Market development & sustainable proc.	✓	✓	✓	✓	✓	✓	✗
Coordinated advocacy & policy input	✓	✓	✓	✓	✓	✓	✗
Product stewardship (including e.g. CDL)	✓	✓	✓	✓	✓	✓	✗
Infrastructure funding	✓	✓	✓	✓	✓	✓	✓
Market and statutory instruments	✓	✓	✓	✓	✓	✓	✓

2016-17 recycling rates *	49 %	53 %	78 %	68 %	59 %	44 %	28 %
Recycling rate target for strategy endpoint	n/a	75 %	70 to 90 %	n/a	75 %	75 %	n/a
Generation (kg/cap yr) (2014-15) *	1,837	2,623	2,527	2,216	2,144	2,210	3,200
Metropolitan landfill levy rate (2018-19) [†]	\$5 (current)	\$70	\$100	\$64.30	\$141.20	\$75	\$NZ10
Public investment level (adjusted to Tasmanian tonnages)	\$1.1 m (i.e. current)	\$5.5 m	\$19.9 m	\$6.4 m	\$6.4 m	\$21.4 m	\$NZ 4.5 m

* References:

Australian figures: Commonwealth Government, *National Waste Report 2018* (recycling rates) and *National Waste Report 2016* (waste generation per capita).

New Zealand figures: Eunomia, *The New Zealand Waste Disposal Levy*, 2017.

[†] Tasmanian landfill levy based on regional rates. Queensland landfill levy rate relates to 2019-20 (i.e. proposed). Western Australia landfill levy currently under review.

An operating framework that responds to Tasmania's features

During workshops with stakeholders, participants freely mentioned some unique features that define Tasmania's operating landscape for waste management and resource recovery, such as:

- The costs of exporting recovered materials off the island, and risks associated with trying to sell recovered materials in distant overseas markets (i.e. in China and southeast Asia)
- Logistical costs associated with aggregating material volumes in the country's least populous state, particularly for more challenging or smaller volume materials
- Difficulties in achieving economies of scale to make some infrastructure-based solutions viable in Tasmania, and the primacy this places on getting scales and locations right.

Stakeholders saw the same characteristics as providing an opportunity for Tasmania to forge an independent path and develop solutions that are unique to its needs. Examples of Tasmania's leading position and ability to adopt independent solutions include:

- The decision by the City of Hobart to eradicate the use of single use plastic items and packaging in retail takeaway outlets
- Envorinex' innovative operations based in George Town, recovering commercial and industrial polymers from recycled plastic, to supply local and mainland customers
- The Glenorchy Recovery Shop, as a leader in product and material reuse
- Kingborough council's use of an aggregate comprising recycled materials to construct a road in partnership with RED Group, Close the Loop and Downer Group
- City of Launceston's implementation of a food and garden organics processing facility and related kerbside collection service
- Dulverton Waste Management's national leadership in landfill management, recognised through the WAMA Award for Landfill Excellence in 2017.

The challenges and leadership examples referenced above demonstrate an awareness of how Tasmania's features impact existing resource recovery models and drive the need to explore new solutions tailored to Tasmania's needs. They suggest that it would be appropriate for the statewide arrangement to consider circular economy principles as being core to its operations and a natural fit for Tasmania's circumstances. This is in addition to the statewide arrangement applying more established decision frameworks represented by the waste hierarchy and the use of interventions to address market failures and drive competitive efficiencies.

Adopting these principles would compel the arrangement to take a systemic view of opportunities to achieve greater resource efficiencies across the economy, rather than being narrowly focused on waste management and 'end of pipe' interventions. It will help ensure that some functions commonly perceived as being on the periphery of waste management – such as market development, sustainable procurement, and product design and distribution (as components of a wider product stewardship strategy) – will play a greater role where they bring clear benefits to the state and where they complement other functions.

A circular economy perspective may invite perspectives and activities for the arrangement to adopt, that may otherwise be hard to substantiate, such as:

- **A focus on maximising benefits** by authorising the arrangement to work beyond 'end of pipe' solutions, being active across the Tasmanian economy to yield the best results
- **Supporting regional development** by targeting collaboration with regional strategic and growth industries (e.g. food and beverage, tourism, healthcare, adventure sports)
- **Supporting council led innovations** such as assisting project design processes, and conducting research to support the dissemination of information to other councils
- **Building effective partnerships** by exploiting the link between Tasmania's reputation for its unique environment and industries that benefit from this environment, and using the partnership to influence supply chains, customers, and other stakeholders
- **Influencing projects of statewide importance** to include sustainable procurement and resource recovery measures that are partly supported by external (i.e. Commonwealth Government) funding, and build the local recovery sector.

List of recommendations

1. An expanded statewide arrangement should in principle and practice, seek to maintain, provide for and leverage a minimum capacity and capability at the regional scale as a component to delivering on statewide goals. This may be achieved through supporting an agreed set of core functions within each region.
2. An expanded statewide arrangement should provide a minimum level of service and support to all Tasmanian councils, irrespective of their membership in a regional authority.
3. LGAT to note that the stakeholder engagement and analysis in Part A of this project supports the needs for and benefits of a Statewide Waste Management Arrangement, and that those benefits may be shared across state, regional and local levels.
4. LGAT to note the functions proposed in completing Part A of the feasibility study, as providing a statewide arrangement with a suitable scope of responsibilities to deliver the recognised benefits and address priority problems identified by stakeholders.
5. LGAT to support Part B of the project to further develop the purpose, role, functions and governance apparatus of the statewide arrangement as necessary for planning, co-ordinating and delivering statewide waste policies, strategies, programs and services.
6. LGAT to note that, should Tasmania fail to install and fund a comprehensive and ambitious statewide arrangement including functions as set out in this report, it is likely to miss out on the benefits that are propelling the other states into action.
7. LGAT to note funding allocations in other jurisdictions, adjusted to Tasmanian tonnages to landfill, equates to investing between \$6.4 and \$21 million in a Tasmanian statewide waste arrangement each year.
8. LGAT to note stakeholder support for, and the potential to pursue, a strong circular economy ambition through a statewide arrangement.
9. If supported, Part B of this study is recommended to further explore incorporating a strong circular economy ambition into a preferred statewide arrangement.

1. Introduction

This report presents the main findings and recommendations on the needs met and benefits delivered in establishing a statewide waste management arrangement for Tasmania. This 'statewide arrangement' is proposed to cover a number of functions and services to support better waste management across the state, and complement existing actions and initiatives delivered at state, regional and local scales.

In proposing this set of statewide functions, the project drew on stakeholder perspectives, arrangements currently in place for waste management in Tasmania, and approaches used and being developed in other nearby jurisdictions. These approaches and functions are in line with established methods to improve market functions and addressing market failures, both recognised and adopted by Commonwealth Government and nearby jurisdictions.

Delivery of this report satisfies the first stage of a two part feasibility study (i.e. 'Part A'). The primary audience for this report is Local Government Association of Tasmania (LGAT) and partners including the EPA and three regional waste management authorities.

In reviewing the report and its recommendations, LGAT and its partners will be positioned to make an informed decision to progress the second part of the feasibility study (i.e. 'Part B'). This part explores and assesses potential approaches to deliver an agreed statewide arrangement; prioritises the allocation of responsibilities to various bodies; and guides interactions across statewide, regional and local spheres of activity.

1.1. Purpose and context

At the LGAT General Meeting of 18 May 2018, a motion was passed:

That Members agree in principle to a feasibility study into the establishment of a Local Government statewide waste management arrangement.

This motion was in recognition that Tasmania lags behind most mainland jurisdictions in its resource recovery. This carries a number of disadvantages for the state including:

- Risks to public health and the environment
- Negative impacts on the public image of the state (as a clean, ecologically conscious visitor destination, residential location, and place to set up and operate a business)
- Significant lost opportunities associated with the economic benefits that come from greater resource recovery.

A perceived deficit in decision making and planning frameworks at appropriate scales is seen to limit progress on a number of waste related issues including for example: product stewardship; illegal dumping; and recycling sector resilience in the face of upheavals in international markets for recovered materials.

Further to these disadvantages, the present gap in capability to deal with these matters at a statewide scale places Tasmania at odds with national directions in waste management and resource efficiency. With the release of the most recent National Waste Policy in 2018, the Commonwealth Government and mainland jurisdictions have shown an intent to more proactively attend to challenges in waste management. As will be explored later in this report, Tasmania is presently 'out of step' with the direction of the Commonwealth Government, the mainland states and territories, and stakeholder and public expectations.

This project can therefore be framed as a step towards reconciling waste management activities and arrangements in Tasmania with multiple important drivers.

Granted the above concerns, LGAT determined that the establishment of statewide arrangements may be a critical factor for improving resource recovery and waste management in Tasmania. This arrangement could provide for:

- An organisation to lead, coordinate, build collaboration and provide oversight of the implementation of improvements to waste management
- Funding as needed to undertake planning and strategy development, deliver programs, and implement actions to drive better waste management practices and outcomes.

In undertaking a feasibility study for a statewide waste management arrangement, LGAT is able to more clearly articulate what such an arrangement should do to ensure benefits to Tasmania are realised, while improving how waste and resources are managed on the island. Further, the study would define essential parameters for how the arrangement would function and how it would work with a range of organisations that currently have a role in securing better waste management practices and outcomes in Tasmania.

1.2. Main project components and deliverables

This feasibility study is to be delivered in two parts, with this report relating to Part A only.

Part A: Collate evidence and present findings on the needs for and benefits of a Statewide Waste Management Arrangement. This will primarily be developed through:

- Engagement with local government and the three regional waste authorities
- An examination of existing regional waste authorities, including their differing governance arrangements, roles and functions and how they may integrate with a statewide arrangement
- Synthesis of a scope of functions for a statewide arrangement that responds to recognised priorities and challenges, and delivers benefits to Tasmania
- A review of arrangements in other jurisdictions.

Findings and recommendations following from the Part A activities are to be set out in a report for LGAT (this report). Pending a decision by LGAT and its partners, the feasibility study may progress to Part B.

Part B: Develop the purpose, role, functions and governance apparatus of this statewide arrangement as necessary for planning, co-ordinating and delivering state-wide waste policies, strategies, programs and services.

Findings and recommendations will be set out in a Part B report, detailing the review of benefits and objectives, proposed purpose, role and function of a statewide arrangement and potential funding mechanisms.

1.3. Methods used in Part A

Findings for Part A of the feasibility study were prepared through five components of work, completed from January through March 2019. An overview of these components is provided below, with further details of each component laid out in Appendix 1.

1. Review of existing Tasmanian waste management arrangements at local, regional, state and national scales (see Section 2 for summary of findings and Appendix 2 for details).
2. Workshops¹ with stakeholders to incorporate:
 - Waste management priorities
 - Perceptions of where arrangements are achieving and are underperforming (with workshop outputs set out in Appendix 3)
 - The nature of problems underlying areas of underperformance
 - Potential solutions, drawing on problem insights shared by stakeholders.
3. Preparation of abridged Investment Logic Maps that define and link problems, benefits and necessary functions of a statewide arrangement to adequately deal with and address market failures behind four waste management priorities that were identified during workshops (see Section 3 for findings and Appendix 4 for contributing processes). These functions are additionally examined in light of National Waste Policy and current developments towards a Tasmanian Waste Action Plan, led by EPA.
4. Comparison of proposed functions with existing arrangements in nearby jurisdictions (Section 4), to better understand how the proposed statewide arrangements relate to current directions and ambitions pursued on mainland Australia and in New Zealand.
5. Exploration of aspirations and ambitions that a statewide arrangement for waste management could be applied towards (Section 5). Drawing on views expressed during stakeholder workshops, it was evident that there was interest in pursuing a circular economy transition to varying degrees, while adopting measures that improved how existing services and markets function. In examining how a circular economy may be pursued for Tasmania, the study sheds light on the extent that benefits may be captured, and the balance of effort to direct towards different statewide functions to realise them.

¹ A workshop summary report has been separately provided for LGAT's records.

2. Current waste management arrangements in Tasmania

Part A of this study determines the needs and benefits in establishing a statewide arrangement for waste management in Tasmania. In doing so, it is useful to take stock of current arrangements that may be in place at local, regional, whole-of-state and national scales. This process will allow for a proposed statewide arrangement that avoids duplication, and can interact constructively and align with other layers of public function as they relate to waste management.

This section provides an overview of the more significant public functions and features concerning how waste is managed in Tasmania. It draws on material set out in Appendix 2, which provides further explanatory detail on how current arrangements operate.

Chapter 2 recommendations:

1. An expanded statewide arrangement should in principle and practice, seek to maintain, provide for and leverage a minimum capacity and capability at the regional scale as a component to delivering on statewide goals. This may be achieved through supporting an agreed set of core functions within each region.
2. An expanded statewide arrangement should provide a minimum level of service and support to all Tasmanian councils, irrespective of their membership in a regional authority.

2.1. Overview of national, state, regional and local arrangements

National context

In 2018, the Commonwealth Government and state and territory governments released the *National Waste Policy 2018*.² This policy re-affirms the waste hierarchy as a decision making framework, while also seeking to include circular economy principles.

It responds to the diminished certainty in international markets for recycled materials, typified by the Chinese Government ban on importing low grade recycled materials, and recent signals from other nations to adopt similar measures. The *National Waste Policy 2018* places emphasis on five principles (see Table 1) and associated strategic themes (see Appendix 2 for further details, including roles and activities recognised across national, state and local government layers).

Table 1: Principles used to guide the National Waste Policy 2018.

5 principles set out in <i>National Waste Policy 2018</i>
1. Avoid waste
2. Improve resource recovery
3. Increase use of recycled material and build demand and markets for recycled products
4. Better manage material flows to benefit human health, the environment and the economy
5. Improve information to foster innovation, guide investment and inform consumer decisions

² Commonwealth Government, 2018 National Waste Policy: Less waste, more resources.

National, state and territory environment ministers are now working towards an action plan to implement the National Waste Policy, including funding, targets and milestones.³ This process is concurrent with other actions coordinated at the national level, including a review of the national product stewardship framework (including the *Product Stewardship Act 2011*). Current arrangements in Tasmania, as set out below, can be viewed in light of the substantial level of activity, commitment and coordination being pursued at this national level.

Tasmanian Government actions and commitments

The Tasmanian Government delivers public functions that safeguard human health and the environment from waste management practices. This is predominantly through the legislated regulatory responsibilities of the EPA (a division of DPIPWE),⁴ complemented with the preparation and release of guidance and education material.

Additional to these ongoing functions, DPIPWE and the EPA may act on government policy initiatives and commitments. Current commitments include:

- Partnering with councils and Community Corrections to deploy Community Service Orders offenders to assist in the removal of rubbish and litter in public spaces, while also investing in an online reporting tool and updating illegal dumping legislation.⁵
- Development of a model framework for a Container Refund Scheme for Tasmania (noting that this commitment does not extend to adopting such a scheme).
- Development of a statewide Waste Action Plan that replaces the *Tasmanian Waste and Resource Management Strategy (2009)*.

Beyond the responsibilities of DPIPWE and EPA Tasmania, other state government policy areas have some relevance to waste management and resource recovery. For example, the Tasmanian Climate Change Office has an interest in the reduction of greenhouse gas emissions across the economy, including emissions from landfills.⁶ Department of State Growth may also be invested in waste management settings and arrangements where they facilitate, obstruct or influence opportunities to use recovered organic materials in Tasmania's bioenergy sector.⁷

³ See Eighth Meeting of Environment Ministers Agreed Statement, 7 December 2018, available from: <https://www.environment.gov.au/about-us/mem>

⁴ The primary legislation that sets out EPA's duties is *Environmental Management and Pollution Control Act 1994*, with regulations supporting the control of waste management practices including *Environmental Management and Pollution Control (Waste Management) Regulations 2010* and *Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010*.

⁵ See Tasmanian Government, Budget Paper 2 FY2019.

⁶ See Tasmanian Climate Change Office, Climate Action 21: Tasmania's Climate Change Action Plan 2017 – 2021.

⁷ See https://www.stategrowth.tas.gov.au/energy_and_resources/energy/bioenergy

Current regional approaches

Tasmanian local councils have voluntarily formed three regional groups to better deliver waste management services across their communities. These groupings are enacted through a regional joint authority decision to create a committee (or similar structure) to resolve and progress a range of waste management issues on behalf of (all or a subset of) its members.

An understanding of these 'regional waste management authorities'⁸ is of particular importance to the formation of a statewide arrangement, given that they represent an existing and intermediate organisational scale between local and state governments. A newly initiated statewide arrangement should work constructively with these existing bodies.

At times, regional authorities have collaborated to resolve issues on a statewide basis. For example, the *Rethink Waste*⁹ website and related education and communications material is budgeted for and shared across the three regions. However, this does not reflect the current norm for how the regional authorities operate – each regional authority is mainly focused on delivering actions within its region, with outside collaboration undertaken on an 'as needs' basis. A further description of each of the three regions is set out in Appendix 2, including a summary table of features, priorities and other details of concern.

LGAT forms an additional body of collaboration between local governments, which may operate on a statewide or regional basis. For example, LGAT may engage with the state government on waste management priorities and policy mechanisms, on behalf of its members. It also has a procurement function which is regularly used to by all Tasmanian Councils to access various goods and services used by Local Government, including items relevant to waste management.

Local waste management and resource recovery services

Local governments perform a range of essential services in waste management including for example, the management of collection services and the operation of facilities. Typical functions may include:¹⁰

- Kerbside collection including municipal solid waste, recycling (for most council areas), and organics (for some council areas) collections, usually contracted to third parties
- Procurement of landfill disposal, recycling sorting, and organics processing services
- Ownership and/or operation of landfills, transfer stations and resource recovery centres
- 'Booked' kerbside collection such as green waste and hard waste collection services
- Litter management, including education, prevention, enforcement and clean-up activities, and the installation and use of public place waste disposal and recycling bins
- Education and engagement with the community to ensure the populace is informed of appropriate waste management behaviours
- Other activities e.g. park maintenance, street sweeping and internal waste management.

⁸ Also referred to in this document as 'regional authorities', for brevity.

⁹ See <http://rethinkwaste.com.au/>

¹⁰ These action areas are reflective of services and responsibilities mentioned during engagement with Tasmanian councils over this project. They largely accord with the description of local government responsibilities as set out in Commonwealth Government's National Waste Policy 2018.

Across these functions, there may be the opportunity to pool resources and data, standardise education materials and service contracts, and achieve scale economies that lower costs and/or improve the commercial viability of various newer technologies. For these reasons, there are often benefits in collaborating at a regional level (as discussed earlier).

These local functions are additionally dependent on effective state regulation to control and inhibit unwanted waste management practices including littering, illegal dumping and 'rogue' operation of facilities. A failure to regulate increases the chance of disposal practices that fall outside the system, leading to environmental damage and potential harms to human health.

2.2. Features of note in proposing a new statewide arrangement

Ahead of developing proposed functions for a new statewide arrangement for waste management in Tasmania, it is useful to briefly discuss some of the more relevant features of the present arrangement. That is, while Section 2.1 sought to provide a general overview of Tasmania's existing context, this section provides a closer examination of selected features.

Current extent of ongoing statewide functions

Content set out in Section 2.1 and detailed further in Appendix 2 reveals a limited set of functions that are currently being deployed at a statewide level to control, manage and influence how waste is managed across Tasmania. In brief, these ongoing statewide functions span:

- **Regulatory processes** led by the EPA, aimed at preventing harm to the environment and human health caused by practices to manage wastes, and covering:
 - The passage of environmental legislation and regulatory instruments
 - Guidance material and engagement to assist compliance with the law
 - The issuance of permits, licences and works approvals
 - Surveillance, investigation, and other evidence gathering activities (supported by various reporting mechanisms and tools)¹¹
 - Issuance of penalties, such as fines, protection and infringement notices, legal prosecutions, and other measures.¹²
- **Education and engagement** as prepared and undertaken by regional authorities collaborating together and separately by the EPA, including:
 - The *Rethink Waste* website and associated Communications Strategy (in development), shared across the three regional authorities
 - Educational resources made available through the EPA's website and engagement activities, including guidance on litter, plastics and paper, sustainable events management and other topics.¹³

¹¹ While in general terms, these activities may be described in terms of data collection, the project team's understanding is that this data collection is mainly to serve regulatory processes rather than being used to support a wider range of potential functions and activities.

¹² Regulatory tools used by the EPA are set out online. See

<https://epa.tas.gov.au/regulation/industrial-activities/regulation-of-industrial-activities/regulatory-tools>

¹³ See <https://epa.tas.gov.au/sustainability/resources-for-schools/waste-education>

- **Strategy and action plan development** as led by various departments and agencies:
 - The EPA is presently leading development of a Waste Action Plan, although stakeholders have expressed concern over its timing, scope and ambition.
 - Department of State Growth is developing a framework for bioenergy, although its ramifications for waste management outcomes are presently unclear. For example, if the driving principle for a bioenergy framework is to stimulate demand for newer energy technologies and/or additional usages of some industry by-products, it cannot be assumed that this framework innately delivers outcomes that reflect optimal waste management.¹⁴

While the Tasmanian Waste Action Plan is proposed to include a range of potential functions, the project team cannot examine and review their materiality or their impact on how waste is managed across the state until a draft plan is made available. For the purposes of this feasibility study, the action plan is noted as being in development, while it is assumed that implementation of the action plan is not yet part of existing arrangements for waste management in Tasmania.

An examination of the extent of statewide (or in New Zealand's case, national) measures in nearby jurisdictions has also been completed for this study.¹⁵ A summary of these measures and arrangements is set out in Appendix 5, and serves as a useful reference to compare against current approaches in Tasmania. On development of a proposed statewide arrangement (set out in Section 3 of this report), the proposed functions will be considered in light of arrangements adopted in those other jurisdictions (see Section 4).

Commonalities and differences across regional entities

The regional authorities share some commonalities while also displaying points of difference that may need to be accounted for in establishing a new statewide waste management arrangement.

An examination of procedural objectives across the regions (in Appendix 2, Table 14) shows that the authorities generally deploy similar functions to achieve their regional aims in improved waste management, resource recovery and waste minimisation.

These include, for example: *strategy development; engagement and education; advocacy; data gathering; regional coordination; program/project development; procurement support*; (and in some cases, *direct procurement of services* such as household chemicals collection).

Similarly, the regional authorities are grappling with common issues, even if they may be at different stages of exploration and delivery, or are trialling different approaches in line with the unique particulars of their region. Problem wastes, organics recovery, household chemical

¹⁴ For example, energy recovery is usually treated as lower in the waste hierarchy than materials recovery, and above disposal to landfill.

¹⁵ It should be noted that the Western Australian *Waste Avoidance and Resource Recovery Strategy 2030* was released early this year, and is yet to be substantially implemented. The Queensland *Waste and Resource Recovery Strategy* is still in draft form, although there is sufficient detail to analyse this strategy on the assumption that the final version will substantially include all or most of the draft components.

collection, and construction and demolition waste are mentioned as priorities in two regional strategic plans.¹⁶ Illegal dumping also appears as a common challenge across regions.

Differences across the regions become more evident when examining the current stages of evolution across the three regional authorities:

- Having undergone substantial departures and turn over in core personnel (following the 2018 council elections), Waste Strategy South is in the early stages of renewing commitments and redeveloping a regional strategic agenda, while adjusting to the decision of several councils to discontinue their STCA membership from 2019-20.¹⁷
- Cradle Coast Waste Management Group is progressing a series of governance reforms in which it transitions from a committee under the Cradle Coast Authority to a joint authority structure in its own right.
- Northern Tasmanian Waste Management Group appears to be in a period of organisational stability, while looking to increase its landfill levy rates and potentially expand functions into other areas beyond waste management and resource recovery.¹⁸

These similarities and differences would suggest that there may be areas of common benefit in establishing a statewide arrangement, where communities and environments across the island are commonly better off. But there may also be areas where each regional authority's interactions and engagements with a statewide arrangement may differ or become less stable, largely owing to the developmental stage that each authority is presently concerned with.

For example, should a regional authority fail to retain adequate funding or council memberships to deliver its functions efficiently and with certainty, this may affect how well its members' needs are represented while working with a statewide arrangement. This underscores the need for a statewide arrangement to be resilient and responsive in how it interacts with, supports, and leverages the abilities of regional authorities and councils. Failing to do so invites the risk of disenfranchising councils that, for related reasons, are less able to benefit from the arrangement.

A final relevant point concerning the regional authorities rests upon their basis of formation. In all instances, the regional waste management authorities were established by regional joint authorities that largely represent economic development interests across a given Tasmanian geography. This is, their locations, scales and borders with neighbouring regions are predetermined by the coverage and membership of their joint authorities, rather than deriving from an inherent logic based on the most relevant characteristics of waste generation and its management. These characteristics might include (historic and projected) volumes and locations of different types of wastes and recoverable materials; existing disposal and recovery facilities; and existing transport infrastructure. So while the actions of the current regional structures may deliver advantages compared to unilateral council processes, it cannot be assumed that these structures innately optimise waste management and planning at all relevant scales.

¹⁶ Waste Strategy South does not currently have a strategic plan to drive decisions and actions, and is instead guided by an action plan.

¹⁷ At the time of writing, STCA membership renewals of Hobart, Glenorchy, Kingborough and Clarence councils are in doubt.

¹⁸ In the NTWMG Regional Strategic Plan 2017 – 2022, there is an expressed interest in extending its scope to 'consider a broader focus on improving other environmental issues facing councils in the NTWMG', (NTWMG Regional Strategic Plan 2017 – 2022, p. 12). At the time of writing, this has not developed into a formal commitment.

Present funding arrangements to support action

At present, two of the three regional authorities have a \$5 per tonne landfill levy in place, with one region (NTWMG) intending to build the levy to \$10 per tonne by 1 July 2022. For both regions, the levy is used to fund administration, services, and program delivery of the regional authorities themselves (i.e. a 100 % regional hypothecation model). Across the two northern regions, the levies account for about \$900,000 in funding for various activities (see Appendix 2).

This ongoing reliance on a dedicated funding mechanism may allow a level of operational consistency and program delivery continuity in the two northern regions, that has perhaps been less evident in the southern regional authority (WSS) which does not presently have a levy instated in the region.¹⁹ At present, the southern region instead relies on an allocation from STCA, ultimately recovered through member fees. In recent years, this has amounted to annual budget of around \$200,000. Thus, across all regions, operation funding is in the vicinity of \$1.1 million.²⁰

To the project team's knowledge, there is no standing funding arrangement for the delivery of waste management functions at the statewide level, apart from funding for EPA's regulatory and education activities (as described elsewhere in this section) and for isolated projects.

For comparison purposes, typical ongoing statewide funding used in other jurisdictions are set out in Section 4 and Appendix 5. It is suggested that, if those same arrangements were transplanted to Tasmania and adjusted for the volume of waste generated and disposed of in Tasmania, an equivalent funding level would be in the order of \$6.4 to \$21 million each year.

¹⁹ In past years, a \$2 per tonne landfill levy was in place in the Waste Strategy South region, although this has been discontinued and no levy in the region is in place at the time of writing.

²⁰ This estimate does not factor in a shift to \$7.50 per tonne for waste disposed of to landfills in the NTWMG, planned from 1 July 2019; not changes in STCA membership composition from 1 July 2019.

Summary of waste management functions under current arrangements

Table 2 (overleaf) provides an overview of public functions that are presently used in Tasmania, at local, regional and state scales. It indicates that a breadth of activities are currently being deployed. Some observations are as follows:

- A large number of functions have been adopted at a regional scale, by regional entities in support of their member councils. In general terms, the regional authorities are given direction to apply these functions in response to their objectives (as stated in their terms of reference).
- As stated elsewhere in this section, while these regional activities may deliver some benefits over and above local services, it cannot be assumed that isolated regional deployment is optimal for all functions. That is, complementary functions at a statewide level may deliver additional benefits.
- Current dynamics within the three regional authorities in Tasmania suggest that member councils' enthusiasm for and commitment to regional approaches may occasionally become less stable, and that the ensuing uncertainty this causes for regional authorities may impact their capacity to deliver efficient services over longer timeframes. A statewide arrangement may need to account for these shifts in regional representation and delivery of function by ensuring a minimum capacity and resilience to directly support local governments and regional entities in the face of changing regional memberships and resourcing levels.
- A limited set of functions are deployed at a statewide scale, mainly through the EPA's regulatory role and activities in support of regulation. Other jurisdictions (see Appendix 5) use a wider array of functions at a statewide scale, moving beyond a regulatory focus, under obligations set out in establishment legislation.
- To the project team's knowledge, legislation in Tasmania specifies the EPA's regulatory role and data gathering functions in support of this role, but does not prescribe that EPA undertakes strategy development or education as an ongoing obligation.
- While the table below indicates a range of functions in place, it does not provide detail on whether the depth of activity and/or scale of commitment within each function is adequate to achieve a given outcome for Tasmania. This assessment cannot be made in the absence of a statewide vision and supporting objectives that would define said outcomes.

Table 2: Extent of public functions to support, improve and deliver waste management services at state, regional and local scales.

Function	Explanatory notes	State	Regional	Local
Regulation of waste management / litter	Covers regulation, investigation, issuance of penalties, prosecution etc.	✓		✓
Education, engagement & communication	Guidance and education on preferred practice and conduct	✓	✓	✓
Strategy development	Development of strategies, vision, and associated actions	✓	✓	✓
Data gathering	Data gathering in support of strategy and/or operations	✓	✓	✓
Initiative funding	Funding to meet strategic objectives via programs, pilots etc.		✓	✓
Infrastructure funding	Provision of capital in support of strategically aligned infrastructure		✓	✓
Procurement support for waste services [‡]	Advise, support and navigate procurement processes		✓	
Coordination of actions and commitments	Coordination of core stakeholders and/or members		✓	
Procurement of services [‡]	Waste, recycling, organics, hard waste, chemicals etc. related services		✓	✓
Advocacy and input	Development of positions and representation in support of reforms	✓	✓	✓
Market instruments	Application of charges and levies etc. to alter market landscape		✓	
Ownership / operation of facilities	Ownership and operation of landfills, transfer stations, MRFs etc.			✓
Maintenance of public spaces	Park maintenance, street sweepings, facility waste management			✓
[‡] Procurement support and procurement activities include activities performed by LGAT on behalf of member councils.				

2.3. Trends and developments in waste and resource recovery

In examining reference material relating to current arrangements in Tasmania and speaking with stakeholders during workshops, the project team was able to gain a view of current developments in service levels and investments in waste management and resource recovery across the island. Some of the more relevant topics are briefly presented below, and provide context for some challenges that Tasmania faces in progressing its waste management activities.

Recent history of landfill consolidation

According to industry, council and EPA representatives, Tasmania had recently undergone a process of landfill consolidation, reducing some 30 landfills down to 13 active landfills recognised by authorities. This process of consolidation was largely achieved through tightening operating requirements imposed by the EPA, with a direct intent to reduce the number of landfills servicing the community. Consolidation has the benefit of reducing regulatory overheads while improving scale economies, so that there are fewer and more efficiently operated sites to regulate. It also diminishes the overall environmental impact of the sector by having a smaller geographic area in the near vicinity of fewer landfills – i.e. the overall area of impacted lands and communities is both smaller and less dispersed when waste disposal is concentrated into fewer landfill sites.

At present, a consolidation process is not actively being pursued by the EPA or by the Tasmanian Government more generally. As the consolidation process continues, there is a need to trade off the benefits mentioned above with potential disadvantages. These disadvantages may include unduly concentrating market power into localised monopolies, and raising the cost of disposal due to increased transport distances. Further, if landfills are viewed as being inconveniently located, this heightens the risk of illegal dumping.

A review of regional authority documents and advice from workshop attendees reveals that, while there are multiple landfills in each region, a single landfill dominates the market for disposal services in each region:

- Dulverton Landfill takes 80 % of the waste designated for disposal in the Cradle Coast Waste Management Group region,²¹ and is owned by Dulverton Waste Management (a joint authority between Kentish, Latrobe, Central Coast and Devonport councils).²²
- The Copping Landfill has over 100 years of remaining lifespan and takes the majority of waste generated in the Waste Strategy South region. The site is owned by Southern Waste Solutions which is itself owned by Clarence City, Sorell, Tasman and Kingborough councils.²³ Most other landfills in the region (McRobbies Gully, Jackson Street, Peppermint Hill) have three to five years left in their operating life (under present conditions) and take a smaller volume of material.²⁴
- The Launceston Waste Centre takes 84 % of the waste designated for disposal in the Northern Tasmanian Waste Management Group region, with the balance sent to landfills owned by Meander Valley or to landfills outside the region.²⁵

²¹ Based on the *Cradle Coast Waste Management Group Strategic Plan, 2017 – 2022 (Appendix B)*

²² See <http://dulverton.com.au/about-our-company/>

²³ See <http://www.swstas.com.au/ownership.html>

²⁴ Based on information provided by WSS representatives.

²⁵ Based on information provided by NTWMG representatives.

During workshops, industry participants shared a view that the current 13 landfills is still too many, and that further consolidation is needed. However, without a process of reviewing current sites and their fitness in meeting the community's demand for disposal sites into the future (which would allow for intended transitions to other management and diversion solutions), it may be challenging to predict which landfills are essential and which are surplus to future needs.

Growing interest in offering kerbside organics processing services

In recent years, some of the larger councils have progressed the delivery of kerbside organics collection services. At the time of writing it is understood that City of Hobart, City of Launceston and some nearby councils have introduced kerbside organics collections, while many other councils are interested in adopting organics collection in the near future.

Dulverton Waste Management also has an open vessel composting facility, although its intake is restricted to materials from commercial customers at present. Based on advice from its owner councils, Dulverton Waste Management would need a larger organics processing facility with more advanced emissions controls in order to deliver municipal organics collection services.

During workshops, some council and regional representatives reflected that it had been challenging to secure a viable number of councils willing to divert a sufficient volume of municipal organics to justify a new regional organics processing facility.²⁶ So while there is broad nascent interest across many councils, it had been difficult to convert that interest into a workable commercial model for the transition to occur.

Exposure to less stable markets for recycled products

Consistent with many councils across Australia, Tasmanian local governments are currently exposed to shifts in the international market for recycled materials,²⁷ largely stemming from Chinese Government policy decisions to restrict the import of plastics, paper and cardboard that are significantly contaminated. This decision has diminished the global demand for these materials, which has lowered their prices and made it more difficult to sell the required volume. In some states, notably Victoria, this has led to excessive stockpiling and associated fire risks and threat of regulatory action (i.e. to close operations until the stockpile risk is addressed).²⁸

Where recycling operators face difficulty in offloading sorted materials at an acceptable price, their immediate options are to bear the reduced profit (which may actually be a net cost) directly, to pass through the impact to councils as higher service costs (to the extent that this option is available in contract conditions), or to stockpile materials and run the risk of an onsite incident and/or a breach of licence conditions.

²⁶ While this was most clearly expressed in the northwest regional workshop, there were some similar sentiments expressed in the southern and northern workshops.

²⁷ Based on general advice provided by LGAT, according concerns raised by its members.

²⁸ See *The Age*, 'State government must act to fix recycling crisis, councils urge', 22 February 2019 <https://www.theage.com.au/politics/victoria/state-government-must-act-to-fix-recycling-crisis-councils-urge-20190222-p50zos.html>

In turn, councils are affected through higher recycling fees; through a greater risk of insolvency of its service provider, which in turn could cause a halt in recycling services; or through the risk that its service provider will have its operating licence revoked, triggering an interim cessation in recycling services until the licence is reinstated or a new service provider is contracted.

Beyond the immediate timeframe, there are other more proactive options to respond to these changes in international market conditions. These may include the upgrade of sorting and decontamination equipment; revised cleaning and segregation practices in the home and at businesses that recycle; and the pursuit of more certain and stable end markets.

Taking action on single use plastics and packaging waste

In March 2019, the City of Hobart became the first Australian local government to restrict the use of single use plastic takeaway packaging in retail takeaway outlets.²⁹ This by-law is intended to enforce the replacement of single use plastics (e.g. plastic containers, cups, cup lids, straws, utensils and packets used for sauces and other condiments) with reusable or compostable alternatives. The by-law is expected to enter into force between late 2019 and early 2020.

This initiative is important as a sign of the local government sector's willingness to lead on waste management issues in line with community needs and interests. Depending on the outcomes of the City of Hobart's approach, other councils may adopt similar by-laws in the absence of the Tasmanian Government enacting a statewide measure that has the same outcome.

More generally, it could be seen as an 'upstream' example of adopting circular economy principles, by opting to prevent the circulation of less recoverable or reusable items in the local economy in preference to alternatives that have a more extended lifespan and lower environmental impact. Should this approach be a success, there may be other items that could be similarly substituted at local, regional or statewide scales.

Successful adoption across the state may also alleviate concerns regarding other measures that may be directed at influencing packaging waste. For example, if the City of Hobart's restriction was shown to have modest and short term impacts on the retail takeaway sector, this may help counter resistance to other instruments such as a container deposit scheme designed to incentivise the recycling of beverage containers.

The introduction of a container deposit scheme is understood to be strongly supported by the Tasmanian local government sector. There may be merit in having a formal, evidence-based and transparent mechanism to test the net benefits, practicalities and stakeholder impacts of a container deposit scheme and other product stewardship initiatives, and issue recommendations on their implementation.

²⁹ See <https://www.hobartcity.com.au/Business/Food-businesses/Single-Use-Plastics-By-Law-Information>

3. Functions and benefits of a statewide arrangement

Having laid out current waste management functions at different scales in Tasmania, the question turns to whether there is public value in adopting additional functions that could be applied at a statewide level.

In this project, the primary method to resolve this question is derived from the Investment Management Standard (see Appendix 1 for method details) as is typically practised in various forms at a state level to determine the basis for investing in a given outlay, legislative commitment or other course of action.³⁰ In the framework followed for this project:

1. A number of priority problem areas is selected, based on challenges confirmed by waste management stakeholders during workshops held across Tasmania.
2. These problem themes are examined according to the features that obstruct the delivery of optimal services and outcomes, and/or impair benefits and damage the environment.
3. Each problem is re-cast in terms of the benefits that could be attained in addressing the problem, and government functions are put forward as a means to address those problems and deliver related benefits. Where relevant, problems are framed as market failures and call upon the use of functions that aim to correct those failures.
4. Functions are then reviewed for whether they are best delivered at a statewide level. Where relevant, responding actions to undertake at local and regional scales are also proposed as a means to deliver a coordinated approach that best captures the benefits across the various geographic scales.
5. Proposed statewide functions are finally considered in light of their interdependencies and the necessary phasing in of 'clusters' of functions that follow a logical order of precedence. This process sets out a potential development cycle for an effective and clearly defined statewide arrangement that can adapt to future needs.

This section presents the processes and findings determined through the above sequence, and specifies a statewide arrangement that inherently delivers public value. As additional validation steps, its proposed scope of functions are examined in light of their alignment to the principles set out in the *National Waste Policy 2018* (see Section 2) and draft priorities that the Tasmanian Waste Action Plan is being developed upon.

³⁰ An abridged process is used on the basis that the preferred approach which involves a series of workshops to progress through the method is not feasible during this project. However, because the intent of the project is to set out the need for a given set of statewide functions / interventions, rather than to justify a large public outlay or commitment, this abridged approach does not substantially introduce a significant risk to the process.

Chapter 3 recommendations:

3. LGAT to note that the stakeholder engagement and analysis in Part A of this project supports the needs for and benefits of a Statewide Waste Management Arrangement, and that those benefits may be shared across state, regional and local levels.
4. LGAT to note the functions proposed in completing Part A of the feasibility study, as providing a statewide arrangement with a suitable scope of responsibilities to deliver the recognised benefits and address priority problems identified by stakeholders.
5. LGAT to support Part B of the project to further develop the purpose, role, functions and governance apparatus of the statewide arrangement as necessary for planning, co-ordinating and delivering statewide waste policies, strategies, programs and services.

3.1. Thematic priorities for waste management

Engagement workshops were used to determine areas where a statewide arrangement is most needed, based on thematic priorities identified by waste management stakeholders (i.e. local government and regional authorities; state government bodies; and the resource recovery industry). Each group volunteered up to eight achievements and thirteen challenges in waste management, drawing on their experiences and perceptions of the sector. This raw information has been collated into common themes across the workshops (see Appendix 3) to provide understanding of which achievements and challenges are widely agreed by stakeholders.³¹

From their list of challenges, participants were asked to nominate or confirm up to three higher priority problem areas. These problem areas were examined in greater detail in a later exercise, to identify public functions that could meaningfully address the problems underlying each area. Should a statewide arrangement come into being, these priority problems could be focused on to deliver immediate and relevant benefits to the community. Additional priorities (as set out in the challenges section of Appendix 3) could be included over time in line with emerging needs and growing capabilities to respond to them.

Thematic priorities chosen by each workshop group are set out below in Table 3. They illustrate a common and pressing interest across four important concerns in the waste management and resource recovery space. It suggests that an appropriately scoped statewide arrangement would deliver widely recognised benefits, rather than being unduly skewed to benefit a narrow range of interest groups.

³¹ A more detailed summary of workshop findings, with in depth notes on the challenges and achievements stated by each workshop group, was separately submitted to LGAT on 5 March 2019. Appendix 3, collating across the workshops to uncover commonalities, sacrifices some of this detail.

Table 3: Selection of each priority problem area as a theme to explore in detail during Part A workshops.

Problem area	Southern region	Northern region	Northwest region	State government	Resource recovery sector
Lack of cohesion in demand for organics	●	●		●	●
Illegal dumping and/or tyre stockpiling	●	●	●	●	
Insecure market for investing	●	●	●	●	●
Resource inefficient use of plastics & packaging	●	●	●		

3.2. Investment logic – defining functions and benefits

Using the selected problem areas, a second workshop exercise was used to investigate the underlying problems within each area and potential functions that could address those problems.

Through this exercise, the project team was able to construct a logical connection between problems within each theme; benefits in addressing each problem; and functions that could rectify each of the problems and deliver on the recognised benefits.³² Where these functions are seen as appropriate and practical to deliver at a statewide level, they form part of the scope of responsibilities assigned to the proposed statewide arrangement.

This process was applied to four problem areas (per Table 5 in the preceding section):

1. Poor cohesion in the demand for organics recovery services
2. Insecure market for investing in recovery infrastructure
3. Risks and harms incurred by tyre stockpiles and illegal dumping
4. Resource inefficient use of single use plastics and packaging.

As the investment logic process provides a depth of detail concerning each of these problem areas, each individual output (the so-called Investment Logic Map diagram) for the four problem areas is presented in Appendix 4. This section retains its focus on the overall scheme of functions collated across these problem areas, used to scope the activities delivered by a statewide arrangement responsible for addressing those problems and realising the benefits.

The figure overleaf visually represents what a statewide arrangement would deliver, based on completing the above process. A range of benefits are anticipated across three primary areas, i.e. enhancing Tasmania's image; protecting the environment and human health; and fostering economic development. These benefits are to be achieved by implementing up to thirteen interconnected functions, linked to corresponding actions at the regional and local scale (as covered in Section 3.4). The contribution of each function to the overall arrangement is expanded upon in the next section.

³² This method follows an abridged Investment Logic Framework process. Similar and more extensive methods are adopted by state governments in Australia to build the case for substantial public commitment, and serve as a reference point for the methods used in this feasibility study. For an example of the framework used by the Victorian Government, see:

<https://www.dtf.vic.gov.au/infrastructure-investment/investment-management-standard>

Tasmanian statewide waste management arrangement

Problems to address

1. Poor cohesion in the demand for organics recovery services
 2. Insecure market for investing in recovery infrastructure
 3. Risks and harms incurred by tyre stockpiles and illegal dumping
 4. Resource-inefficient use of single use plastics and packaging
- ... plus others to be agreed with waste management partners

Benefits

Enhance Tasmania's image

Positive culture towards waste management and 'faith in the system'

Climate change tackled through local solutions

Tasmania seen as valuing its natural assets

Narrative to attract visitors, residents, investors

Tasmania as a leader in tackling problem wastes

Government delivering on expectations to help people lead lower impact lifestyles & businesses

Protect health & the environment

Effective prevention & inhibition of littering, dumping and stockpiling

Cleaner & safer environment due to less illegal dumping & litter

Low reliance on landfills - lower landfill impacts including gas emissions, leachate, odour and amenity impacts

Greater self assurance in how to recycle

Soil quality improved using locally recovered material

Efficient resource use embedded in consumer decisions

Foster economic development

Natural assets retain value and are untarnished

Brands that rely on a clean image of Tasmania retain market credibility

Resources are recovered and used, in line with the scale of opportunity

Efficient private & public investment in recovery infrastructure and jobs

Efficient service prices that reflect demand over time

Strong local markets for recovered resources

Lower costs & risks borne by the recovery chain

Functions

1. **Vision statement** for waste management / circular economy in Tasmania, linked to a **credible commitment** to take action.
2. **Statewide infrastructure & service planning** and scheduling.
3. **Development of strategies for priority items**, including:
 - organics from municipal and commercial sources
 - end of life tyres
 - single use plastics and non-recyclable packaging
 - others identified as a priority for Tasmania.
4. **Statewide data collection, analytics and reporting:**
 - tracking and investigating illegal dumping incidents
 - volume of waste generated and services demanded at statewide & regional scales
 - projection of capacity needs for infrastructure and services
 - to inform preferred interventions to problem materials.
5. **Governance and collaboration models** to engender trust & commitment:
 - to support surveillance & remediation of dumping sites
 - to build certainty for new services & assets to come online.
6. **Local government engagement and procurement support** to lock in demand for new services and facilitate efficient use of assets.
7. **Coordinated education, engagement and marketing:**
 - to ostracise illegal dumping and encourage reporting
 - to foster acceptance and uptake of new recovery services
 - to stimulate demand for recovered resources
 - to support best practice in local and regional services
 - to guide consumer & purchasing behaviours and decisions.
8. **Statewide enforcement and prosecution** of stockpiling in breach of licence conditions, and illegal dumping.
9. **Market development measures including sustainable procurement:**
 - to stimulate markets for resources recovered locally
 - to foster the replacement of non-recyclable and single use items with reusable / recyclable / recycled content items.
10. **Coordinated advocacy and policy input** at the national level, where national solutions are deemed to be more effective.
11. **Product stewardship of priority items** including product re-design and takeback arrangements (e.g. CDL)- *pending examination of net benefit.*
12. **Infrastructure funding** to stimulate investment in recovery assets
 - *Pending private investment gap analysis & case for public funding.*
13. **Market and/or statutory instruments** (e.g. levies, bans from landfill) to address gate fee differentials
 - *Pending an analysis of gap between gate fees for new services and willingness to pay above existing landfill rates.*

1. Functions to support situational awareness and direction setting

A number of functions were identified as needed to set out a vision for waste management and its role in the broader Tasmanian society and economy; to commit objectives; and to form a path of actions to arrive at a preferred end state over a defined period. The arrangement equally needs a capacity to take stock of the present status of waste management in Tasmania, and how it is evolving over time in response to both strategic actions and wider influences on its operating landscape. This commitment needs to carry a level of credibility that motivates external stakeholders, service providers and investors to commit to their corresponding roles.

In short, the arrangement needs components associated with strategy development and situational awareness at a statewide scale. These components encompass a range of functions as set out below, including an explanation of the needs they fulfil. In general terms, these *strategic* functions underpin the more *action-focused* functions by determining the extent that each action needs to be exerted to elicit a desired change in how waste is managed.

While it is noted that some analogous activities presently occur at a regional level (see Section 3.4, Table 4), there is sufficient connectivity and similarity across regions, and opportunities for efficiencies based on standardisation, knowledge sharing and scale economies to warrant a statewide approach that adds to existing regional approaches.

1. **Vision statement** for waste management and circular economy in Tasmania, linked to a **credible commitment** to take action.
 → *Needed to set the direction for waste management and provide a compelling basis for stakeholders to plan and dedicate resources, and drive investments for the longer term.*
2. **Statewide infrastructure & service planning** and scheduling.
 → *Needed in order to appraise the fitness of existing infrastructure and services with respect to future needs as set out in a corresponding vision statement, and signal to stakeholders and the market on the need to transition to a more optimal mix of infrastructure and services.*
3. **Development of strategies for priority items**, including:
 - Organics from municipal and commercial sources
 - End of life tyres
 - Single use plastics and non-recyclable packaging
 - Others identified as a priority for Tasmania.
 → *Needed to set out the actions, engagements and commitments necessary to achieve desired changes in the management of priority items*
4. **Statewide data collection, analytics and reporting:**
 - Tracking and investigating illegal dumping incidents
 - Volume of waste generated and services demanded at state and regional scales
 - Projection of capacity needs for infrastructure and services
 - To inform preferred interventions to problem materials.
 → *Needed to allow Tasmanian Government, regional authorities, councils and other stakeholders to gain knowledge of existing waste management performances, effects of different strategies and actions, and opportunities and risks emerging from the operating environment. Essential for evaluating the costs and benefits of different measures.*

While noting that the EPA is currently involved in strategy development in the form of progressing the Tasmanian Waste Action Plan, and that this plan may include data and infrastructure planning elements, the project team is not aware that this function holds legislative status for the EPA. That is, this function may be pursued at the discretion of the EPA, DPIPW or the Minister for Environment. Stakeholders remain uncertain as to the timing of the action plan's release and the degree of any follow up commitments from the state government. So under the status quo, there is arguably insufficient certainty and confidence that the above functions will be undertaken to the depth and frequency required to drive meaningful change, nor that they will be used to enforce and guide subsequent actions.

In contrast to the incumbent arrangements, the proposed arrangements will require appropriate internal governance measures³³ to mandate that these functions take place to the extent necessary, and that there is sufficient oversight to review performance and initiate reform processes when justified. This will be explored further during Part B of the feasibility study.

2. Core functions to support and influence primary stakeholders

In establishing the need for a range of vision and path-setting functions (as above), a second cluster of functions relates to supporting and influencing stakeholders that have a direct role in acting on new waste management practices, services and infrastructure delivery. These include councils, businesses, households, and waste and resource recovery operators.

This group of functions are essential to achieving outcomes in the problem areas, and should be rolled out in response to a given vision and strategy for waste management and resource recovery in Tasmania. Other functions (discussed in the following section) may also have a role, but the significant commitment, outlays, stakeholder impacts and/or technical detail associated with their implementation means substantial capacity building, evidence gathering and business case development may need to occur before they can be initiated in a way that grants confidence that the intended outcomes and benefits emerge.

The statewide functions identified as providing core support and inducements to stakeholders are set out in the table below. Efforts to establish these functions could occur in parallel with the preparation of visions, strategies and data frameworks (as above). Their deployment would then be driven in line with the main priorities set out in vision and strategy documents.

³³ To an extent, governance measures (and related control measures) themselves may be considered as comprising a function in its own right. Given the scope of Part B to explore and test governance arrangements, there is the opportunity to update the proposed statewide arrangement to include governance / control systems as a separate function during that part of the project.

These functions will be most effective where they reinforce each other, and where they support corresponding actions at local and regional levels. Implicit to the success of these functions, and an important role for the statewide arrangement, will be to maintain cohesion across these functions and in their alignment to strategic vision and objectives, and to provide coordination and support for regional and local actions.

For example, enforcement and prosecution of stockpiling in breach of licence conditions and illegal dumping (i.e. function 8) should remain within the EPA's regulatory scope. Yet there is likely to be opportunities to adopt a comprehensive framework of activities in this area that systematically enables local and regional entities to play their roles with greater certainty.

Similarly, the statewide arrangement will need to establish terms and scopes of activity in line with each function, that allow the arrangement to remain within accepted practice for government involvement. For example, market development needs to be viewed in light of market development activities that the private sector is not positioned to undertake on its own behalf (e.g. preparation of impartial guidance; development of standards and specifications). Further, it needs to be tested in line with the public value it delivers, rather than according to preconceived views on whether it can pay for itself through some form of revenue generating arrangements.

5. **Governance and collaboration models** to engender trust & commitment:
 - To support surveillance & remediation of dumping sites
 - To build certainty for new services & assets to come online.

→ Having a means to devise and test governance and collaboration models will support a coordinated approach to address illegal dumping and other forms of waste malpractice; and to provide a way to deliver economies of scale and/or cost sharing associated with procurement, asset ownership, cross-sectoral initiatives and so on.
6. **Local government engagement and procurement support** to lock in demand for new services and facilitate efficient use of assets.

→ Procurement support is an essential function to synchronise and aggregate demand for new services, particularly in organics processing and dealing with problem wastes. It also allows a pathway to centralise expertise for councils to draw upon.
7. **Coordinated education, engagement and marketing:**
 - To ostracise illegal dumping and encourage reporting
 - To foster acceptance and uptake of new recovery services
 - To stimulate demand for recovered resources
 - To support best practice in local and regional services
 - To guide consumer & purchasing behaviours and decisions.

→ Education, engagement and marketing will be needed to shift waste management practices for different sectors, and to normalise preferred behaviours. These shifts rely on third parties' cooperation, which will be facilitated by education and engagement.
8. **Statewide enforcement and prosecution** of stockpiling in breach of licence conditions, and illegal dumping.

→ A fundamental role for the arrangement will be to shift current practices, services and supporting infrastructure from the current configuration to a preferred configuration that delivers greater benefits. All of these activities occur within a regulated system of public and private services and activities.

However, illegal dumping and stockpiling represent a leak from this system that impairs health and the environment. This leakage needs to be closed via credible regulation, so that all material flows are channelled in accordance with a stated vision.
9. **Market development measures including sustainable procurement:**
 - To stimulate markets for resources recovered locally
 - To foster the replacement of non-recyclable and single use items with reusable / recyclable / recycled content items.

→ The recovery and reuse of materials rests upon there being sufficient and stable demand for end products, and current disruptions in international recovery markets make it a priority to stimulate local markets and new ways to capture the value of recovered materials in Tasmania. Similarly, materials that are more challenging to recover need to be addressed at the front end, by shifting preferences in the procurement of goods.
10. **Coordinated advocacy and policy input** at the national level, where national solutions are deemed to be more effective.

→ A statewide arrangement needs to be able to input to national processes where suitable, taking account of the perspectives and interests of stakeholders within Tasmania.

3. Dedicated intervention measures backed by accumulated evidence

In setting out a suite of functions for a statewide arrangement to deliver, a number of functions are distinct in carrying a degree of complexity and/or impact on the community, while also being highly dependent on the performance on other functions to support introduction. These functions are re-stated below, with a brief description of the role they have in addressing recognised problems in the existing arrangements.

11. Product stewardship of priority items including product re-design and take back arrangements (e.g. container deposit scheme) - pending understanding of net benefits.

→ May be needed where a proactive, coordinated approach involving a greater organisational and/or financial responsibility from the supply chain is needed to achieve better waste management, resource efficiency and environmental outcomes. But may also need to fit within or work with National Product Stewardship arrangements.

12. Infrastructure funding to stimulate investment in recovery assets

Pending private investment gap analysis & case for public funding.

→ May be needed to close the gap between what businesses and the community (via councils) are willing to pay for new recovery services and logistical infrastructure, and the financial cost associated with building new infrastructure and recovering capital costs through service pricing over the asset's lifespan.

→ May otherwise provide a suitable risk sharing model to help operators invest in innovative technologies and business models that cannot otherwise be justified.

13. Market and/or statutory instruments (e.g. levies, bans from landfill) to address gate fee differentials. Pending an analysis of gap between gate fees for new services and willingness to pay above existing landfill rates.

→ May be needed to provide incentives to shift waste management habits away from landfill disposal and towards other practices aligned to waste minimisation and recovery.

→ Depending on the type of instrument, there may be significant cost impacts on the community. In the case of a landfill levy, this will introduce a revenue stream whose allocation may be used to support other statewide functions – decision makers should rationally address the extent that revenue and market signalling are main drivers.

These functions are proposed to be progressed and adopted after other functions are planned for, and after the statewide arrangement has gathered sufficient data to inform some of the fundamental characteristics for how these functions would operate and why they are necessary. The functions would also ultimately derive from the vision and strategic plan for waste management in Tasmania, as the vision and strategic plan define the outcomes that other individual functions need to contribute towards. In effect, the statewide arrangement would need to complete a business case or impact analysis to demonstrate how each function needs to work. For each function, these dependencies are explained further below:

Product stewardship for priority items – The introduction of product stewardship approaches rests on a decision to recognise a given item as a priority to address through product stewardship, and which cannot be efficiently or effectively addressed through other means. The approach needs a clear understanding of which aspects of the supply chain have a role in the solution, and what actions need to be taken by different actors. Cost and competition impacts of the product stewardship arrangement also need to be accounted for, and the proposed approach should interact constructively with the National Product Stewardship Scheme.³⁴

Thus, the decision to pursue the product stewardship pathway needs to be accompanied with data gathering processes; negotiation and partnership creation across supply chains, consumer groups and the recovery sector; engagement with other jurisdictions on the extent it is a common priority. The exception to this is for instances where the product has been on the national agenda and a solution has substantially been progressed. The role of the statewide arrangement may then focus on planning and coordinating a Tasmanian implementation.

A clear candidate for consideration under this function would be the use of a container deposit scheme to address beverage packaging. Ideally, the statewide arrangement would adopt a suitable process flow, consultation plan, and data gathering procedures to test the effectiveness of a scheme for the state, and recommend characteristics that best meet Tasmania's needs.

Infrastructure funding – The role of infrastructure funding is to assist the establishment and upgrade of infrastructure that is essential for delivering a preferred suite of waste management services and supporting practices on behalf of the waste generators at local, regional and state scales. This funding could include allocations to upgrade transfer stations; funding to build, expand or improve resource recovery facilities; grants to expand the volume and range of items accepted in reprocessing facilities; research and development funding; and other examples.

Efficient and effective infrastructure funding needs to be informed by statewide and regional visions, strategic plans and infrastructure schedules that identify what new capacity is needed in different locations, to meet customer demands and achieve statewide and regional targets.

Equally, there needs to be some understanding that a gap exists between what customers are willing to pay and what price a proponent needs to lock in to ensure an adequate return on investment. A statewide arrangement could progress this understanding through data-enabled procurement support and business case processes. This cost gap will reflect the extent that public funding is needed to stimulate the delivery and commissioning of new infrastructure.

Market and/or statutory instruments – Market instruments generally occupy a specific role in waste management, which is oriented towards changing behaviours and preferences of waste managers in response to shifts in pricing caused by the market instrument. Statutory instruments such as banning items from going to landfill may obtain a similar objective in shifting behaviours and preferences, although may have a different balance of outcomes certainty, social cost, and risk of perverse outcomes compared with market instruments.

³⁴ State jurisdictions are not formally required to await national processes to enact product stewardship for a given product. For example, container deposit legislation represents a form of product stewardship that states have independently led on. Victoria's e-waste framework is substantially wider in scope than the national approach (limited to computers and televisions). City of Hobart's ban on single use plastics and packaging at retail takeaway outlets represents a council-led product stewardship approach to a class of products.

A statewide adoption of a market or statutory instrument, such as a landfill levy or ban, should ideally account for a number of factors that can be influenced through other statewide functions:

- The market or statutory instrument would ideally apply to facilities and waste streams that are efficient to regulate compliance with that instrument, e.g. such as landfills that can readily be licensed with a volume and/or compositional reporting obligation.
- The instrument should ideally be sufficiently transparent and potent to alter the preferences and behaviours of targeted waste managers. For example, a landfill levy may be visible to collection contractors and some generators. Municipal solid waste levies may be visible to councils working on behalf of their residents, but aggregated pricing may mask the effect of a levy on the residents themselves, and may not appreciably stimulate waste avoidance or diversion. Bin configuration pricing measures and education may be more suitable instruments to effect behaviour change in residents.
- The levy rate needs to be of a sufficient quantum to make preferred alternative solutions competitive, in order to stimulate the necessary investment in recovery infrastructure. The statewide arrangement should therefore ideally understand price differentials between landfills and commercially viable alternatives, and an efficient levy would be set at a rate that is no more than is necessary to shift decisions towards other solutions.
- To the extent that increased landfill pricing (or statutory bans on sending items to landfill) incentivises illegal dumping, the statewide arrangement and its partners will need to have a standing capacity to prevent and address dumping practices.

It is suggested that to implement a market or statutory instrument, the statewide arrangement first needs to have a depth of understanding of current costs and practices, and how these may shift in response to the instrument. A number of other functions also need to be sufficiently mature to ease the introduction of the instrument and counteract any perverse outcomes.

In the case of a landfill levy, if the intent of the instrument is to shift consumer and waste management practices in response to changes in relative pricing between landfills and alternative options, then the levy is functioning *mainly as a market instrument* and the above connections with other functions need to be accounted for. The generation of revenue may be an incidental and secondary effect.

On the other hand, if the main purpose is to accumulate funds to direct to other functions and activities, then the role of the levy is as a *revenue generating instrument* and needs to be viewed in comparison to other options to secure ongoing funding for associated functions and activities. In this case, the market impacts (if they exist) are incidental and secondary, but need to be understood in terms of their welfare, administration and competition costs.

The above distinctions regarding the use of a landfill levy are not trivial (and may involve the intent to pursue both market and revenue goals) as they set out the terms for determining:

- What rate the levy needs to be applied at, and for which items, to deliver the desired outcome
- To what purpose(s) any revenues are to be directed to achieve the desired outcome
- What roles are required of other functions to grant greater certainty that the desired outcome will be achieved, and that undesired outcomes can be avoided or dealt with.

Given the fundamental nature of these questions, the inclusion of a levy or similar instrument at a statewide level needs to involve a clear and shared view across partners and stakeholders on the intent of the instrument, and what characteristics are essential to delivering on that intent.

3.3. Phasing in and funding functions

Content in the above section suggests that a suitable approach may be to phase in clusters of functions according to a logical sequence. In this approach, early stages of the statewide arrangement would focus on processes to:

- Set out a vision and strategic planning on priority components
- Take stock of current infrastructure and services at state and regional scales, and review their fitness for Tasmania's future needs (in light of an agreed vision and strategic plan)
- Plan for a robust and needs-driven data framework, that supports planning and delivery at statewide, regional and local scales and enables the preparation of materials to support different stakeholders who play a role in the transition to better outcomes.

With the above processes underway, the statewide arrangement could commence planning for and building its capacity for core and ongoing 'on the ground' activities. This planning phase could provisionally rely on draft vision statements and strategic plans, then progress into operating phases once the vision and strategic plans are finalised.

The previous section also advised that the statewide arrangement may need to collect and develop robust evidence to inform how infrastructure grants, product stewardship for priority items, and market instruments would optimally work in Tasmania. At the same time, partners and investors in the arrangement may wish to show a record of performance before embarking on one or more of these three measures, given the potential impacts and stakes that they involve, and the corresponding efforts and levels of trust required from third parties.

It may therefore be suitable to conduct an interim evaluation before these measures that:

1. Reviews the performance of the statewide arrangement with respect to existing functions, incorporating stakeholder views on its effectiveness
2. Brings together the evidence base to allow the statewide arrangement to specify the working parameters for any proposed infrastructure grants, market and/or statutory instruments, and product stewardship approaches for selected items
3. Locks in stakeholder and partner support to continue a statewide approach including implementation of additional measures based on the evidence provided.

With respect to funding the statewide arrangement, the project team notes that this is an area that may be detailed further during Part B of the study. None of the recommended functions mandate a specific funding model, and could be funded through agreed commitments from partners over a preferred funding cycle (e.g. from operating budgets); through state budget processes; through limited project funding (with state and/or Commonwealth contributions); or based on a levy revenue formula, in line with some other nearby jurisdictions.

While noting the above, an examination of other jurisdictions (in Section 4) shows that the higher performing states (e.g. Victoria and South Australia) have dedicated substantial funding to their waste management arrangements on an ongoing basis, and that other states (e.g. Queensland and Western Australia) are moving in a similar direction. This funding allows for substantial infrastructure, education and engagement, and procurement support processes that may not be readily workable unless consistent and adequate funding is locked in. A suitable funding strategy for Tasmania may be to secure ongoing funding as needed to deploy functions to a given level in line with targeted outcomes, and periodically review funding arrangements as new functions come on line and commitments to higher ambitions are locked in.

3.4. Collaborating across state, regional and local levels

Further to setting out statewide functions, the feasibility study provides a convenient space to map local and regional actions that could be applied in response to each statewide function, representing coordination across different scales of action and to ensure local governments and regions are best able to plan for and capture the benefits that a statewide arrangement offers.

Table 4 sets out some suggested actions at the local and regional level in response to each function. The project team concedes that some of these areas of activity may already be within scope in different regions and council areas (see Appendix 2), although having additional support at a statewide level may engender improved outcomes and efficiencies at these more localised levels. Further, it is through aligning different levels of decision making, investing and taking action that a strategic approach to waste management in Tasmania may be effectively delivered with strong support across the island.

The project team understands that, at the time of writing, one of the regional authorities is undergoing substantial change in its membership composition. Up to four council may elect to discontinue membership in the next financial year.³⁵ This dynamic is important as it illustrates that a statewide arrangement will need to be able to cope with a degree of variation across Tasmanian regions and over time, with respect to the capacity of regional authorities to deliver functions for and represent the interests of different local governments.

While the statewide arrangement could in itself be a stabilising influence, depending on the resilience it can introduce and foster at local and regional levels, it also needs the means to provide functions and services irrespective of changes in regional capabilities. This will be explored further during Part B of the feasibility study.

Actions provided in this table are suggestions only. Should a statewide arrangement be adopted in Tasmania, it would be proper to undertake a more formal process to review and harmonise activities at different scales of operation.

³⁵ This understanding is based on advice provided by LGAT and regional authorities.

Table 4: Suggested functions and actions at regional and local scales, that correspond with proposed statewide waste management arrangement functions.

Statewide function	Regional function / action	Local function / action
Vision statement linked to a credible commitment	Regional waste management & resource recovery strategic plan	Local government waste strategy and deployment of services in line with state and regional goals
Development of strategies for priority areas		
Statewide infrastructure and service plan	Regional infrastructure schedule and plan	Input to regional and state infrastructure plan based on projected needs and service objectives
Data collection, reporting and analytics	Input into requirements based on member needs and constraints, regional strategic objectives	Input into requirements based on needs and constraints, commitment to submit data
Governance and collaboration models	Participation and input to collaboration processes	Participation and input to collaboration processes
Council engagement & procurement support	Partner in engagement & procurement services	Participation as client in procurement support
Coordinated engagement & education programs	Partner in coordinated engagement and education planning, oversight and evaluation	Education program delivery and evaluation
Statewide enforcement & prosecution	Assist to mediate and communicate respective roles in enforcement and prosecution	Partnership in enforcement and prosecution (e.g. surveillance, investigations and reporting roles)
Market development & sustainable procurement	Review of regional opportunities in line with economic development drivers Draft guidance and assist roll out of sustainable procurement in the region	Uptake of sustainable procurement policies Partner in stimulating market development in the local area Trialling of new product applications (e.g. testing specifications and medium scale applications)
Coordinated advocacy & policy input	Coordination of member views and input; and formulation of regional positions	Input into regional and state positions; coordination / collaboration across peer councils
Product stewardship	Input into product stewardship models Review how product stewardship options interact with regional strategic plans, member services, regional communities and economies	Consultation of impacts on local economies and communities Opportunity to deliver services and trial programs
Infrastructure funding	Review of infrastructure needs and opportunities in line with regional schedules and strategic plans Coordination of responses across region	Opportunity to seek infrastructure funding to improve council-owned facilities and services
Market and statutory instruments	Potential role in implementation, collection and/or allocation, depending on model adopted	Potential role in implementation, collection and/or allocation, depending on model adopted

3.5. Interactions with national waste policy

The primary focus of this feasibility study is on the needs and benefits of a statewide waste management arrangement, taking into account the unique needs and opportunities that Tasmania presents. While this should take precedence over national considerations, there is merit in examining the way that the proposed arrangement interacts with the national agenda.

The five principles of the *National Waste Policy 2018* (see Section 2) serve as reference points to explore how the functions and benefits of the statewide arrangement could position Tasmania to align with national directions on waste management. Where relevant, this comparison will also link national strategies under each principle with the proposed Tasmanian model.

Principle 1: Avoid waste

Within the national waste policy, the principle of avoiding waste is couched in terms of improving the design of systems and products; educating and facilitating behaviour change across the community; and more generally promoting waste avoidance.

The proposed arrangements grant Tasmania the opportunity to closely align with this principle, given the presence of education and engagement as an ongoing function. Product stewardship can also, depending on the model used, foster innovation in both products and systems to be less resource intensive. Elsewhere in this report (Section 5), it is suggested that Tasmania could adopt a strong approach to the circular economy, which opens the prospect of targeting different systems and products for waste avoidance through redesign.

The intent of the proposed arrangement to stimulate waste avoidance is reinforced in the stated benefits, which acknowledge the need to embed resource efficiency into consumer decisions.

Principle 2: Improve resource recovery

This principle is applied prominently in the proposed statewide arrangement. The national strategic components of this principle include:

- *Product stewardship*, which directly mirrors a function set out in the arrangement
- *The need for a common approach*, which is analogous to the arrangement's recognition for policy input and advocacy functions, and the need to link scales of action together
- *Improving access* for regional, rural and indigenous communities to participate, which aligns with the opportunity to use the statewide arrangement as a means to collaborate across regions and locales throughout Tasmania (see Section 3.4)
- *Increasing industrial capacity* wherein a number of measures are suggested to improve the recovery of resources from all waste streams – the approach proposed for Tasmania applies this principle strategically, i.e. by building the capacity of the recovery sector from its current status to a future level, as informed by a statewide vision.

Further, the benefits flowing from the statewide arrangement strongly favour a range of economic development outcomes flowing from the improved use of resources. In achieving these benefits, the statewide arrangement will naturally align with this principle.

Principle 3: Increase use of recycled material and build demand and markets for recycled products

In this principle, the national waste policy exhorts jurisdictions to stimulate demand for recovered content both through their own demand for goods and through facilitating demand in third parties. This precisely accords with a stated function of the statewide arrangement proposed in this study, i.e. to develop markets for recovered material, and engage in sustainable procurement practices. This function is picked up in the intended benefits as well, most notably with respect to greater resource efficiency across the state; strengthened local markets; and improved stability for the recovery chain.

Principle 4: Better manage material flows to benefit human health, the environment and the economy

The description for this principle in the national waste policy clarifies the importance of taking account of material flows across the economy and re-directing those flows to deliver better outcomes for the community. In employing the Investment Logic Map process to identify benefits from a range of functions that are applied in response to known problems, this feasibility study has built the delivery of those benefits into the arrangement by design.

The proposed arrangement leads with vision setting and strategic planning, while taking account of current material flows via an infrastructure and services planning process. In progressively shifting these flows from a reliance on permanent disposal to a model that recirculates materials through the economy, the arrangement will deliver environmental and economic benefits. The inclusion of a strong response to illegal dumping helps ensure that material flows that leak harmful materials to the environment are halted, and that resources are retained within a system that seeks to deliver the optimal benefit from the materials made available in that system.

In the national waste policy, plastics and packaging, organic materials and hazardous waste are isolated as materials to focus on. It is notable that the statewide arrangement independently identifies organics, plastics and packaging as priorities as well, and has the option to include hazardous materials as a subsequent priority in line with current regional strategic plans.

Principle 5: Improve information to foster innovation, guide investment and inform consumer decisions

The proposed statewide arrangement recognises the importance of having a suitable data management and reporting framework. In this report, it is mentioned as a cornerstone to the arrangement that needs to be attended to from the outset.

Similar to the national waste policy, the arrangement must recognise data and information as a component to empowering decisions, and to providing a more certain environment to underpin infrastructure investment. The application of accurate information in guidance materials, planning documents and statements of investment opportunity will aid in the change from disposal oriented practices and services to those that meet the ideal of a circular economy.

Quality information is also essential to the statewide arrangement in its need to work as an adaptive structure that is able to evaluate past performances and assess current directions. In doing so, the arrangement can adjust to and incorporate new priorities while making the case to widen its scope of functions where it makes sense to do so.

3.6. Responding to Tasmanian Waste Action Plan themes

Based on guidance provided by the EPA, the Tasmanian Government is preparing a Waste Action Plan for the state. This plan will ostensibly adopt principles of the circular economy, potentially in response to several interconnected factors that could include:

- Recent upheavals in the international market for recycled material
- The realisation that overseas demand for recovered materials is presently unstable and that exported recyclate is exposed to global competitive pressures and market risks
- This impaired resilience of Tasmania's resource recovery system while there is an investment gap in reprocessing on the island and a failure to develop local markets
- The stimulation of local markets and downstream business opportunities as a means to foster a resilient recovery sector while retaining more value-adding steps in Tasmania.

At the time of writing, this action plan is in development. The extent that circular economy principles will be taken up in the final plan cannot be verified until after its release. In anticipation of this aspect of the action plan, a scenario where Tasmania ambitiously embeds circular economy principles is set out in Section 5 and may inform stakeholders and partners of the benefits of adopting that approach.

Further guidance from the EPA indicates that the action plan will be structured into six themes as set out in Table 5 below. Noting the functions proposed for a statewide arrangement (presented earlier in this section), it is useful to map how this arrangement may support or otherwise interact with a final action plan that retains these six themes. In principle, the proposed statewide arrangements could integrate positively with the final Waste Action Plan, and may provide a suitable framework to apportion and share implementation responsibilities (pending Part B findings on a recommended configuration and governance for a statewide arrangement).

Table 5: Waste Action Plan themes (in development, provided by EPA) and how they intersect with the proposed statewide arrangement.

Action plan theme	Statewide arrangement links
Governance <ul style="list-style-type: none"> Statewide arrangements Roles & responsibilities 	<p>This study proposes statewide arrangements to deliver benefits by design. Governance settings, including roles and responsibilities across a number of functions, are to be resolved during Part B. Governance and collaboration expertise is also a capability set out in the suggested arrangement.</p>
Data, target setting & innovation <ul style="list-style-type: none"> Develop targets Improve data to support investment Bolster innovation & research networks 	<p>Vision and targets are posed as priorities for the arrangement to implement, along with improved data collection and reporting. Data management is recommended as requiring a joined up approach.</p> <p>Innovation funding is proposed as a potential means to lift the viability of the recovery sector, although end purposes and outcomes need to be defined with respect to circular economy opportunities.</p>
Infrastructure planning <ul style="list-style-type: none"> Develop resilient markets Account for projected needs 	<p>Infrastructure planning has been explored as a critical priority for waste management, with a set of responding functions proposed in Appendix 4.</p> <p>Up to five statewide functions are suggested as being directly applicable to infrastructure planning and granting investor certainty, and other functions may have a supporting role to deliver an environment in which infrastructure delivers optimal returns to the community and private investors.</p>
Support for industry <ul style="list-style-type: none"> Cross sector collaboration Market development & procurement 	<p>The proposed arrangement recognises the need to support industry in its role in transitioning to a circular economy, where there is evidence that this support is vital. Should Tasmania commit to an ambitious circular economy vision, market development and procurement will become high priorities.</p>
Education <ul style="list-style-type: none"> Enhanced community engagement and education Roll out of state government election commitments Private sector promotion and marketing of goods with recycled content 	<p>Education is a stated priority for a statewide arrangement to deliver on, with responding functions at the regional and local level. Education is particularly relevant with regard to:</p> <ul style="list-style-type: none"> Reducing dumping and guiding communities and business to reporting on and discouraging illegal waste management practices Gaining community buy in for the transition to organics reprocessing services Improving the quality and volume of recovered materials collected from the kerbside and elsewhere, and transitioning to lower impact consumer decisions and business practices
State-national policy <ul style="list-style-type: none"> Align state and national settings Specify standards for recycled materials 	<p>State-national policy links are not a focus area for this study (but refer to Section 3.5 for a review of interactions). A statewide arrangement that coordinates across local, regional and state government levels will best position the Tasmanian Government to engage with the Commonwealth, noting that policy input and advocacy is recommended as a function for the arrangement to adopt.</p>

3.7. Proposed statewide arrangement – an overview of benefits

A series of workshops was used to identify a number of priorities for waste management in Tasmania. These priorities were drawn from the views of local government and regional authority representatives, state government officials, and members of the resource recovery industry. The workshops identified a strong and common interest in the foundation of a statewide arrangement, and broad consensus on the problem areas that are paramount to address across Tasmania.

Using an abridged Investment Logic Map process, the project team was able to describe a range of benefits that would flow from setting up and operating this arrangement, where it undertakes a set of prescribed functions to address four priority areas. While these benefits cannot be quantified until a further level of detail relating to ambitions and targeted outcomes is obtained, it is instructive to define a range of benefits across reputational improvement, economic stimulus, and protection of the environment and human health.

Enhancing Tasmania's image

In a general sense, the statewide arrangement has the potential to lift Tasmania's image as a place that respects the environment and values human health, while building the community's confidence in how waste and resources are managed on the island.

Whether the reality accords with this potential depends on the appetite of different parties to commit to the statewide arrangement and craft a vision and ambition that accords with Tasmania taking a leading position on waste management and resource efficiency.

The statewide arrangement can aid businesses' and residents' 'faith in the system' for managing wastes and resources, which may include reasonable expectations that:

- Items diverted for recovery will be appropriately dealt with
- Guidance and support will be provided where it is needed and in a form that best aids preferred decisions and practices
- Regulations will be applied evenly, effectively and in line with community expectations
- Innovation and a willingness to invest (while accepting a minimum level of risk) will be encouraged and rewarded.

The statewide arrangement could also provide an opportunity to demonstrate Tasmania's leadership in addressing climate change and moving to a circular economy. In prioritising the diversion of organic material from landfill to other beneficial uses, greenhouse gas emissions will diminish from the sector. Similarly, the ambitious adoption of circular economy principles, centred upon influencing material flows into and throughout Tasmania's island economy, could provide the opportunity to re-think the state's isolation as an advantage rather than an obstacle to innovation. City of Hobart's decision to ban the use of single use plastic items and packaging at takeaway outlets is an early demonstration of the state's willingness to lead.

Protecting the environment and human health

The statewide arrangement will prevent harms to the environment and human health through its systematic approach to dealing with several priorities in waste management. The joined up approach to addressing illegal dumping and stockpiling (see Appendix 4) provides for a concerted and coordinated strategy to minimise the harms from those unwanted activities.

The focus on diverting organic matter from landfills also protects the environment and human health through removing this reactive content from landfills, and in doing so, reducing landfill gas emissions, leachate emissions, and the extent of odour and vermin problems. In converting the organic material into a product such as a soil conditioner or compost, Tasmania's soils may be replenished with less need for artificial and non-renewable soil additives.

Finally, the statewide arrangement promotes greater resource efficiency across the economy through education, infrastructure grants, product stewardship, market development, and other measures. At a holistic level, this will have the effect of reducing resource demand both locally and across international supply chains, sharing the benefit of Tasmania's investment in a statewide arrangement across the globe.

Fostering economic development

The statewide arrangement adopts a range of functions that will stimulate the Tasmanian economy, supporting investment and creating job opportunities. This is in line with a circular economy framework in which private parties are encouraged to invest in new recovery infrastructure and services through a number of interventions including:

- Functions to aggregate and coordinate local government demand for organics processing and other recycling services in a manner that provides a clear signal for solution and technology providers to respond to, and to help discover efficient pricing models to deliver returns on investments without incurring undue ratepayer costs
- Market development activities designed to foster the uptake of recovered resources in the local economy, including through sustainable public purchasing strategies
- Education and engagement activities to ensure consistent, high grade volumes of materials are fed into the recovery system in a way that reduces commercial risks
- Public funding measures to expand the infrastructure and new technologies needed to make the transition to a preferred approach to waste and resources, recognising that this transition involves both public benefit and commercial opportunity
- The deployment of market and/or statutory instruments that shift the competitive landscape in favour of new resource recovery services and business models.

Of equal importance, the statewide arrangement includes a range of measures designed to protect the environment and human health (as detailed above). In doing so, Tasmania's natural assets are protected from degradation and contamination. This is of direct benefit to industries that make use of Tasmania's natural systems and that trade off Tasmania's reputation for a clean environment. Arguably, there is a basis for seeking explicit recognition from these industries that they are direct beneficiaries of and stakeholders in Tasmania's natural assets, and testing their willingness to partner with the statewide arrangement across a number of functions.

4. Arrangements used in other jurisdictions

In setting out a statewide waste management arrangement for Tasmania, it is useful to compare the proposed approach to measures adopted or under consideration in other nearby jurisdictions.³⁶ This allows an understanding of where there are notable similarities and differences, and what that may mean for the Tasmanian arrangement.

This section draws on an examination of documents that describe approaches taken in six nearby jurisdictions, i.e. Western Australia, South Australia, Victoria, New South Wales, Queensland and New Zealand. Three areas of these jurisdictions' approaches will be examined in order to inform how the proposed arrangement compares with the direction of other locations, and to uncover where there are notable disparities. These areas include:

1. The scope of functions deployed at a state (or in New Zealand's case, national) level, given the opportunity this represents to verify whether the proposed functions correlate with areas of commitment pursued by governments with a more established record
2. The extent that circular economy principles are being integrated into each jurisdiction's approach, given the recognition of those principles as a driver for sustainable development as specified in the *National Waste Policy 2018*
3. The extent of public investment provided towards each jurisdiction's statewide arrangement, on the understanding that the level of resourcing may be just as important as the range of functions and capabilities made available.

To maintain brevity, content in this section will strictly relate to the three areas stated above. For reference purposes, more general descriptions of each location's approach to waste management and resource recovery are set out in Appendix 5.

Chapter 4 recommendations:

6. LGAT to note that, should Tasmania fail to install and fund a comprehensive and ambitious statewide arrangement including functions as set out in this report, it is likely to miss out on the benefits that are propelling the other states into action.

7. LGAT to note funding allocations in other jurisdictions, adjusted to Tasmanian tonnages to landfill, equates to investing between \$6.4 and \$21 million in a Tasmanian statewide waste arrangement each year.

³⁶ In Queensland's case, their waste and resource recovery strategy is presently in public draft form, so this will be the basis of comparison for that state.

4.1. Comparison of functional scope

Based on a review of strategic plans and related documents for each jurisdiction, the functions used in each location to achieve their targeted outcomes can be identified.³⁷ Table 6 sets out the thirteen functions proposed for Tasmania's arrangement (from Section 3), and checks whether those functions have been or are being adopted in other locations. The timing of each jurisdiction's current strategic plan (or similar) is also presented, as this may be a relevant factor.

The table suggests that other Australian jurisdictions have already adopted or are in the process of adopting the same measures as those being proposed for Tasmania in this report. In the case of New South Wales, Victoria and South Australia, these measures have been planned and implementation progressed since 2014-15. Queensland and Western Australia are more recent adopters of these functions, with prior strategies being more piecemeal and modest in intent.³⁸

This separation into earlier and later adopters correlates with the diversion rates of the five mainland jurisdictions, with Queensland and Western Australia exhibiting the lowest mainland recycling rates at 44 % and 53 % respectively. If the proposed waste strategies for these two states achieve their targeted recycling rates of 75 % (by 2050 and by 2030 respectively), it will bring their performances in line with the other three mainland states.

Arrangements in New Zealand stand in contrast to the directions and aspirations that the mainland Australian states have committed to over recent years. New Zealand has fewer measures in place and (not shown in the table) lacks an overarching lead organisation with responsibility to deliver on waste management and resource recovery outcomes in the country. It has also been criticised for its lack of vision and absence of strategic approaches to priority items and materials.³⁹

In the absence of additional measures for Tasmania, it may be reasonable to expect that the Tasmanian recycling rate will stagnate at the present rate of 49 % or fall in response to the commercial risks posed by current international market conditions for recycled material. If this were to occur, the larger benefits and stimulatory effects of improved waste management and the shift to a circular economy may be isolated to the mainland Australian states as they push towards recycling rates of 75 % and beyond.

³⁷ Where useful, documentary analysis has been complemented with interviews with relevant officers.

³⁸ See https://audit.wa.gov.au/wp-content/uploads/2016/10/media2016_23-WasteStrategy.pdf

³⁹ See Territorial Authority Forum (a division of WasteMINZ), *Local Government Waste Management Manifesto*, 2018. See <https://www.wasteminz.org.nz/2018/01/local-government-waste-management-manifesto-released/>

Table 6: Comparison of functions proposed for a Tasmanian statewide arrangement with functions in place (or proposed to emplace in the near future) elsewhere.

	Tasmania <i>proposed</i>	Western Australia	South Australia	Victoria	New South Wales	Queensland	New Zealand
Timeframe of present strategy / plan	n/a	2019 – 2030	2015 – 2020	2015 – 2025	2014 – 2021	2019 – 2050	2010 onward
Vision statement	✓	✓	✓	✓	✓	✓	✗
Strategies developed for priority areas	✓	✓	✓	✓	✓	✓	✗
Statewide infrastructure and service plan	✓	✓	✓	✓	✓	✓	✗
Data collection, reporting and analytics	✓	✓	✓	✓	✓	✓	✗
Governance and collaboration models	✓	✓	✓	✓	✓	✓	✗
Council engagement & procurement support	✓	✓	✓	✓	✓	✓	✗
Coordinated engagement & education	✓	✓	✓	✓	✓	✓	✓
Statewide enforcement & prosecution	✓	✓	✓	✓	✓	✓	✓
Market development & sustainable proc.	✓	✓	✓	✓	✓	✓	✗
Coordinated advocacy & policy input	✓	✓	✓	✓	✓	✓	✗
Product stewardship (including e.g. CDL)	✓	✓	✓	✓	✓	✓	✗
Infrastructure funding	✓	✓	✓	✓	✓	✓	✓
Market and statutory instruments	✓	✓	✓	✓	✓	✓	✓
2016-17 recycling rates *	49 %	53 %	78 %	68 %	59 %	44 %	28 %
Recycling rate target for strategy endpoint	n/a	75 %	70 to 90 %	n/a	75 %	75 %	n/a
* References: Commonwealth Government, <i>National Waste Report 2018</i> . Eunomia, <i>The New Zealand Waste Disposal Levy</i> , 2017.							

4.2. The adoption of circular economy principles

The Commonwealth Government's *National Waste Policy 2018* and draft priorities for the Tasmanian Waste Action Plan place principles for a circular economy at their focal centres.⁴⁰

Given that a statewide arrangement could opt to take a robust approach to the circular economy in setting its ambitions (discussed further in Section 5), it is useful to explore the extent that its principles are recognised and used as a driver for action in other jurisdictions. The text box overleaf provides a summary of how the circular economy is being implemented in each jurisdiction via waste and resource recovery policy (or via other measures, where relevant).

In short, the more recent waste and resource recovery strategies of Western Australia and Queensland include strong commitments to adopting circular economy measures. This is particularly the case for Queensland, wherein its draft strategy names the transition to a circular economy as one of three strategic priorities. Moreover, the Queensland Government commits to waste and resource recovery as a sector targeted for strategic investment, given the perceived economic, environmental and social benefits this would bring.

Other jurisdictions – New Zealand, Victoria, South Australia and New South Wales – do not reference circular economy concepts in their waste and resource recovery strategies. This is likely to be a timing artefact (given that the most recent of these strategies was released in 2015). However, all four locations proclaim a more recent commitment to a circular economy, with New South Wales and Victoria committing to its adoption in future policies and strategies.

The above findings suggest that circular economy aspects will be mainstream to state and national waste strategies and related action plans in the coming years. Given Tasmania's isolation from the mainland and the broader risks inherent to international recycling markets at the current time, it may be suitable for Tasmania to similarly adopt a strong position on the circular economy and explore how it should be interpreted to respond to the island's unique advantages and challenges. A determined commitment to basing Tasmania's economy on circular economy principles also accords with the island's existing status as a national renewable energy leader, setting the benchmark for sustainable economic development in the region.

⁴⁰ See Section 2 for a brief overview.

Circular economy principles as adopted in nearby locations

Western Australia

Through its current strategy, WA sees a transition to a circular economy as an opportunity to harness more value from recovered materials and drive investment in infrastructure and jobs.

At the same time, this transition helps WA bypass two barriers in its recovery system, i.e. its distance from international markets and high internal aggregation and transport costs. In this sense, it shares some barriers with Tasmania (i.e. challenging geography and intrinsic barriers to accessing international markets).

Queensland

The Queensland Government is taking a bold stance on shifting to the circular economy, and has named this as one of three strategic priorities to drive strategic investment in. There are three working themes under this priority - the need to recover materials and stimulate demand; improvements to data quality to support commercial decisions; and giving clarity on waste to energy policies.

Considerable detail is provided on how a circular economy would be pursued in Queensland, emphasising a commitment to supporting purchasing decisions and recovery / manufacturing infrastructure and technologies to stimulate the shift to a circular model.

South Australia

87 % of recovered material is reprocessed in South Australia, while 8 % is processed interstate, and 5 % is exported. The prevalence of local flows provides a partial buffer to recycling market risks, although the SA Government claims an interest in going further. As the current waste strategy was released in 2015, this is somewhat before circular economy ideas gained traction in Australia. It is reasonable to expect that the circular economy will have a larger role in the next strategy for SA, anticipated for 2020.

New South Wales

Similar to South Australia, the New South Wales waste strategy was released at a time before the concept of the circular economy was widely appreciated (i.e. in 2014). In 2018, NSW Government released its circular economy policy statement and discussion paper. It anticipates incorporating circular economy principles and practices into the next waste strategy for NSW, scheduled for 2021-2022, and includes circular economy priorities and how core principles will be interpreted for the NSW context.

Victoria

Victorian arrangements are led by the Statewide Waste & Resource Recovery Infrastructure Plan, which was first released in 2015 without reference to circular economy principles. The 2018 Recycling Industry Strategic Plan commits the government to releasing a whole-of-government waste policy by 2021, and will use circular economy principles as a basis for transition.

New Zealand

The *New Zealand Waste Strategy 2010* focuses on risk minimisation and resource efficiency without reference to a circular economy. On the Ministry for Environment website, content on the circular economy and its application in New Zealand is set out, including some project funding via the New Zealand Waste Management Fund.

4.3. Public investment into waste management arrangements

An examination of other jurisdictions provides an opportunity to compare the level of public investment that they are committing to deliver on their waste and resource recovery strategic plans, and to examine the mechanisms used to secure that investment.

These public investment levels can be adjusted for the relative volumes of waste sent to landfill in each state, to arrive at a metric for dollars invested per tonne of waste sent to landfill. This provides a comparable unit that is independent of the scale of waste generation.

This is useful as it shows how much each jurisdiction has been willing to invest to support their waste and resource recovery outcomes, and grants some understanding of how efficiently each jurisdiction is achieving its results. For although many jurisdictions are now moving towards a similar range of activities, they may not be supporting those activities to the same extent.

Table 7 below estimates the level of public investment per tonne of waste for four jurisdictions. These jurisdictions use fixed formulas for reinvesting landfill levy revenues back into waste and resource recovery activities and initiatives. Therefore an understanding of landfill levy rates in each jurisdiction (allowing for relative volumes of waste that attract different levies) and the proportion of levy revenue hypothecated back into waste and resource recovery initiatives allows an estimate of how much each jurisdiction is reinvesting back into their strategic plans for every tonne of waste sent to landfill. These figures should be viewed as gross estimates, as different jurisdictions may permit slightly different scopes of activities as eligible via the funding process.

For every tonne of waste sent to landfill, \$NZ10 is invested by the New Zealand Government into national and territorial activities; while on the Australian mainland up to \$47.25 per tonne of public funds is proposed to be committed in Queensland. These relative quanta are of interest in their own right, irrespective of whether they are funded through landfill levies or other measures.

Table 7: Public investments in some nearby jurisdictions, as dollars per tonne of waste sent to landfill.

	WA	Qld ⁴¹	SA	NZ (\$NZ)
Landfill levy (\$/tonne FY2019) metro/rural	\$70 / \$0	\$75 / \$0	\$100 / \$50	\$10 / \$10
Metro coverage rate	70%	90%	76%	100%
Weight adjusted landfill levy (\$/tonne)	\$49	\$67.50	\$88	\$10
Hypothecation rate (into statewide action)	25 %	70 %	50 %	100 %
Rate of investment (\$/tonne)	\$12.25	\$47.25	\$44	\$10

Victoria and New South Wales do not use fixed hypothecation formulas. Government publications identify that New South Wales has annually committed \$100 million to *Waste Less Recycle More*.⁴² A report on the Victorian Government Sustainability Fund includes a 23 % allocation to waste and resource recovery,⁴³ and that its annual revenues amount to \$130 million. Victorian

⁴¹ The landfill levy rate for Queensland used here is the rate due to be introduced from 1 July 2019.

⁴² Total NSW Government expenditure committed to *Waste Less Recycle More* has accumulated to \$802 million over eight years.

⁴³ See Victorian Government, *Investing in a more sustainable future: Victorian Government Sustainability Fund 2017-18 Activities Report*, 2018.

waste and resource recovery agencies are further funded about \$30 million each year.⁴⁴ These states' public funding (on a tonnage basis) can be determined, according to Table 8 below.

Table 8: Public investments in some nearby jurisdictions, as dollars per tonne of waste sent to landfill.

	NSW	Vic
Metropolitan landfill levy rate (\$/tonne) metro/rural	\$141.20	\$64.30
Annual landfill levy revenue allocation to waste & resource recovery	\$100 m	\$60 m
Annual waste to landfill (2016-17)	7.1	4.2 m
Rate of investment (\$/tonne)	\$14.10	\$14.20

These calculations allow for a combined table (Table 9) to illustrate metropolitan landfill levy rates and public funds reinvested in each jurisdiction. For additional insight, these reinvestment rates (as dollars per tonne disposed to landfill) could be applied to waste tonnages of 453,000 tonnes in Tasmania (for 2016-17).⁴⁵ This gives an indication of the scale of investment that other jurisdictions currently commit, adjusted to Tasmanian volumes.

These figures serve as a benchmark for the annual level of public investment (or budget) that Tasmanian partners may strive to commit to the statewide arrangement, if they aspire to achieve similar results as those being set and achieved by leading mainland jurisdictions.

Disregarding New Zealand, based on its lower recycling rate and narrower range of statewide functions, the other jurisdictions are moving towards annual allocations in the order of \$6.4 million to over \$21 million (corrected for Tasmanian volumes)⁴⁶. The outlay going to regional authorities' activities in the current year amounts to \$1.1 million, raised by voluntary regional levies and council allocations. That is, this sum is raised without a state government contribution.

Table 9: Public funding allocations in other jurisdictions, adjusted to Tasmanian tonnages to landfill.

	WA	Qld	SA	NSW	Vic	NZ
Recycling rate (2016-17)	53 %	44 %	78 %	59 %	68 %	28 %
Metro landfill levy (\$/tonne)	\$70	\$75	\$100	\$141.20	\$64.30	\$NZ10
Public reinvestment (\$/tonne)	\$12.25	\$47.25	\$44	\$14.10	\$14.20	\$NZ10
Equivalent budget in Tasmania	\$5.5 m	\$21.4 m	\$19.9 m	\$6.4 m	\$6.4 m	\$NZ4.5 m

This table shows that, across the three states that have had a substantial strategic plan in place since 2014-15 (SA, NSW and Victoria), metropolitan landfill levy rates do not always correlate with recycling rates achieved. Victoria is second ranked in terms of recycling rate yet has a lower metropolitan landfill levy than the other two states. Victoria also commits the second lowest reinvestment back into its statewide functions, at \$14.20 per tonne versus \$44 per tonne in SA and \$14.10 in NSW. South Australia achieves the highest recycling rates, but adopts the second highest landfill levy rate and largest level of reinvestment per tonne of waste disposed to landfill.

While there may be contextual differences that account for these differences in results, some factors may lie in how efficiently each arrangement operates and how the total funding amount is distributed across different functions. It suggests that a Tasmanian statewide arrangement will need to adopt diligent planning and oversight processes to achieve higher delivery efficiencies.

⁴⁴ Estimate based on VAGO, *Managing the municipal and industrial landfill levy*, 2018.

⁴⁵ As set out in *National Waste Report 2018*, p. 23.

⁴⁶ While the WA investment equates to \$5.5 m in Tasmania, WA is presently reviewing its funding and landfill levy arrangements to better support its new Waste and Resource Recovery Strategy.

4.4. Conclusions drawn from arrangements in other jurisdictions

Performance levels and approach to statewide waste management arrangements

- Tasmania's recycling rate lags behind those of the mainland states, and those states exhibit different levels of achievement and sophistication in how they manage wastes.
- Three jurisdictions, South Australia, Victoria and New South Wales, all have had a more comprehensive statewide arrangement in place since 2014 or 2015 and are the three states displaying the highest resource recovery rates (using 2016-17 figures).
- Western Australia and Queensland lag behind those three states but are in the process of committing to more ambitious statewide arrangements, with accompanying lifts in landfill levies and public funding levels. Should Tasmania fail to install and fund a comprehensive and ambitious statewide arrangement, it is likely to miss out on the benefits that are propelling the other states into action (which are likely to be similar to those benefits identified for Tasmania, set out in Section 3).
- In contrast to the mainland Australian states, New Zealand's recycling rate (at 28 %) lags behind Tasmania's (at 49 %). Its range of activities and level of ownership in addressing waste at a national level remain modest. It has strongly been criticised by territorial authorities and the waste sector within that country. Tasmania's current level of commitment arguably has more in common with that of New Zealand than with the current and recently proposed levels of commitment evident on mainland Australia.

Wide adoption of circular economy principles

- In reviewing the extent that circular economy principles have been taken up on the mainland states and across the Tasman Sea, it is evident that mainland states are moving towards ambitious adoption, and are not simply using it as a rhetorical overlay. New Zealand's position is more difficult to ascertain, although recent grant funding has focused on the circular economy as a prevailing theme.
- The more recent waste and resource recovery strategies of Western Australia and Queensland already integrate these principles into their priority actions. South Australia, New South Wales, Victoria and New Zealand all show evidence that circular economy concepts will feature in their next waste strategy iterations (due from 2020 to 2022).
- The Australian *National Waste Policy 2018* also adopts circular economy approaches as a complement to the continued application of the waste hierarchy. Thus, the other Australian states are in the process of aligning to the national approach while emphasising functions – notably market development, sustainable procurement, and other strategies to influence the flow of materials into and throughout their economies – that stimulate their economic development in new and more sustainable directions.

Public investment in a statewide arrangement

- Additional to the range of functions being deployed, it is useful to examine the level of funding each jurisdiction is prepared to commit to their statewide arrangements. Tasmania may have unrealistic expectations in what a statewide arrangement can achieve if the arrangement is not resourced to reach its potential.
- Annual funding in Tasmania is regionally based and amounts to \$1.1 million across the state. If the other states' funding strategies were imported to Tasmania and retained their funding proportionate to the volume disposed, they would be investing between \$6.4 and \$21 million on the Tasmanian statewide waste arrangement each year.

5. An exploration of vision and ambition for Tasmania

Section 3 of this report accounted for four areas of concern expressed by stakeholders and, in applying an investment decision process, used these concerns as a basis to specify functions for an arrangement to overcome those challenges and bring benefits to the state of Tasmania.

Section 4 confirmed that these functions are consistent with the approach that mainland states are trending towards, and provided a benchmark for public sums of investment and resourcing needed to empower the arrangement to deliver meaningful change. This benchmark was derived from sums invested (or soon to be invested) by mainland states into their own initiatives and plans to improve their resource recovery rates and lower waste generation.

These points of inquiry may be complemented with a third area centring on the organising framework(s) that the arrangement uses to set the state's vision and direction for waste management, to optimise the benefits to Tasmania.⁴⁷ This is useful as it underpins the rationale for the statewide arrangement, and justifies the use of different functions in service to that rationale. To use a transport analogy, if the functions of a statewide arrangement are represented as the components of a vehicle, and funding and resources represent a fuel source, then the organising framework symbolises what the destination needs to look like.

While practical constraints prevent a full examination of such organising frameworks, there are two general concept systems driving intervention in waste management that are worth exploring in this feasibility study to some detail. These are captured under two framework headings:

1. The pursuit of efficient and optimally functioning waste markets
2. Progression to a circular economy based on potential benefits

These two frameworks are useful to explore as they may be seen as two boundaries for why government may choose to intervene in the solid waste sector (and related areas). The former involves an inherently minimalist approach, i.e. to remove obstacles to market efficiency and approach the performance of ideal markets; the latter is more interventionist in nature, and actively seeks to tilt the state's social and economic trajectory towards a preferred orientation.

In this section, these distinct pathways that the statewide arrangement could be applied towards are explored in detail. While this may strictly be outside the focus stated in the project brief for Part A, the process helps inform the extent that a statewide arrangement could deliver benefits. In turn, this will help clarify what each function needs to achieve in line with Tasmania's level of ambition, while helping to visualise how those benefits will become a reality.

Chapter 5 recommendations:

8. LGAT to note stakeholder support for, and the potential to pursue, a strong circular economy ambition through a statewide arrangement.

9. If supported, Part B of this study is recommended to further explore incorporating a strong circular economy ambition into a preferred statewide arrangement.

⁴⁷ In this report, this concept of an organising principle is specific to decisions and directions concerning the use and disposal of waste and resources, rather than more general principles concerning good government decision making practice including, for example, Tasmania Government, *Good governance guide for local government in Tasmania*, 2018.

5.1. The pursuit of efficient and optimally functioning markets

This framework derives from the assumption that well-functioning markets are the best way to deliver goods and services, and that government is to intervene only when those markets are not efficient and impair welfare. This welfare cost is reflected as an undue cost to society or the oversupply or undersupply of goods or services. Ideally competitive markets set the standard for market functionality, with competitive pressure driving efficient services and resource allocation. Applied to waste and resource recovery, the arrangement's efforts would be restricted to addressing obstacles to efficient services and investments in that market.

In this approach, benefits would be isolated to the increased effectiveness, efficiency and market stimulus within the recovery sector. For example, benefits in line with 'protecting human health and the environment' would be reduced to measures that contain or address pollution externalities incurred by waste management. The efficient use of regulation and market instruments allows intervening to the point that the cost of pollution impacts are not outweighed by the cost of regulation. This approach inherently includes the challenge of quantifying those impacts and assigning a value to them, in order to compare them to the cost of intervention.⁴⁸

The above approach to managing human health and environmental impacts based on externalities is an example of a market failure that would be within scope for the statewide arrangement under this framework. The role of the arrangement would be to identify such failures and apply its functions only where those failures carry a material impact, and where the cost of intervention does not outweigh the welfare cost of the failure itself.

These failures that justify action fall into a range of areas including market failures, regulatory failures, unacceptable risks, and failures to meet social goals.⁴⁹ Table 10 below casts a subset of functions for the statewide arrangement in light of some failures they may respond to.

Table 10: Selected statewide functions presented in terms of market failures.

Function	Failure being addressed
Council procurement support	To address undue market power and/or barriers to entry
Coordinated education	To address information gaps impacting recycling and recovery practices
Enforcement / prosecution	Pollution externalities caused by waste management
Market development and sustainable procurement	To address information gaps that affect the uptake of recycled products
Market instruments	Pollution externalities caused by disposal

While a framework for the statewide arrangement to develop efficient markets has the benefit of falling within accepted practice for government intervention, there are some shortcomings in applying this philosophy to waste management. These include:

⁴⁸ Taking landfill impacts as an example, the pollution impacts of landfills are multi-faceted (leachate, gaseous emissions, vermin, odour etc.) and occur over multiple time scales (i.e. immediate to up to thirty years after closure) and geographies (local, statewide and global). They are also context-sensitive and probabilistic. Illegal dumping impacts are equally challenging to quantify, and are further problematic as the extent and location of this activity is not well understood.

⁴⁹ See Australian Government, *Best Practice Regulation Handbook*, 2007, p. 58.

http://regulationbodyofknowledge.org/wp-content/uploads/2013/03/AustralianGovernment_Best_Practice_Regulation.pdf

1. Ideal market assumptions do not correlate with how the waste market works

Advice from Australian governments on whether and how to intervene in markets are often framed on the basis that markets, left to their own devices, are ideally competitive. They involve multiple buyers and sellers and a capacity for actors to make free and informed decisions on whom they transact with, with no barriers to entering or leaving the market. In this state, customers exercise informed choice and competitive pressure keeps pricing efficient.

Yet this ideal poorly reflects how waste management markets actually work. Firstly, the market exists due to regulation and is fundamentally shaped by that regulation as a necessity to prevent uncontrolled management practices (illegal dumping, burning, disposal in waterways etc.). Secondly, the market is characterised by few waste management service providers, partially due to natural monopolies and quasi-monopolies, and market consolidation. Market power and information asymmetries naturally benefit those providers. Thirdly, barriers to entry are endemic to the sector, variously influenced by regulation, capital costs, scaling barriers and social licence – managed processes are needed to introduce new players into the market. Finally, the premise that ideal markets are efficient rests upon the condition that the market is in stable equilibrium, yet current upheavals in the international market for recycling (with India now moving to ban recycled plastics,⁵⁰ alongside China) suggest instability is the norm for the foreseeable future.

These points show that intervention is necessarily interwoven into the fabric of waste management in Tasmania, and interconnectivity between public intervention and private market activity is part of its standard operation. While the Tasmanian Government should look to leverage the efficiency of competitive markets in the solid waste sector wherever possible, it is unrealistic to view the market as closely resembling ideal markets in the absence of intervention.

2. Requisite indifference to the path of development

In adopting this basis for intervention, the statewide arrangement's singular interest is in addressing the undue welfare costs of waste management where evidence of these costs occur, and operating under the assumption that welfare is optimised through free market interactions wherever possible. Any social and economic development follows a path determined by market participants' free expression of their preferences.

In a pure sense, this would make the statewide arrangement indifferent to many aspects of waste and resource recovery policy as presently understood. Its role would not be to purposefully encourage greater resource recovery and waste avoidance, or to transition the economy onto a more sustainable path, but to remove encumbrances to efficient markets. Recycling and recovery rates and the efficient use of resources would be incidental to this end.

3. Unrealistic expectations on information processing capacities

As a final point, this framework rests on the ability of the statewide arrangement to characterise the systemic social costs of existing waste management measures and alternative scenarios (including the cost of intervention), and pursue the path of greatest net benefit or least cost. But where these costs need to be quantified, a high information burden is imposed, given the complex, multi-faceted and pervasive nature of the social costs of waste management. In contrast, a framework that aims to shift the economic direction to a preferred path may be less technically onerous in its decision making, while still taking due account of costs and benefits.

⁵⁰ See <https://www.smh.com.au/environment/sustainability/australia-faces-deepening-recycling-crisis-as-india-bans-plastic-waste-imports-20190327-p5180c.html>

5.2. Strategic investment in a circular economy

A brief overview of circular economy concepts

The circular economy is a more recently developed framework to base a statewide waste management arrangement's activities on. While there are various definitions, a circular economy can be framed as an economy that 'aims at value creation by organising value retention in cycles.'⁵¹ That is, value is created and retained by extending the beneficial use of materials that enter the economy, and by reducing the materials throughput per unit of value created. This is achieved by cycling resources back into productive use at scales in line with technical, organisational and commercial practicalities.

The shift to a circular economy requires a systematic consideration of how to achieve these ends at each stage across production, consumption, and disposal/recovery; and a recognition that decisions and practices adopted during one stage can augment or detract from opportunities to retain or recover value at other stages. More generally, the sharing and reuse of resources and products is seen as preferable to the alternative where consumption choices are made on an individual basis without consideration of resource impacts.



Figure 1: Phases of material flow in a circular economy
(Source: Commonwealth Government, *2018 National Waste Policy: Less waste more resources*).

The concept of the circular economy builds on a historic cornerstone of waste policy and decision making, the waste hierarchy. While the waste hierarchy is a guidance tool that is often directed at decision makers and managers at or after the point of discard, the circular economy calls on a wider range of actors and roles to consider the environmental impacts of their decisions at points upstream and downstream of their direct involvement.

⁵¹ Jonker, J., Kothman, I., Faber, N. and Montenegro Navarro, N., *Organising for the circular economy*, 2017.

An environment conducive to adopting circular economy practices

During workshops with stakeholders, participants freely mentioned some unique features that define Tasmania's operating landscape for waste management and resource recovery, such as:

- The costs of exporting recovered materials off the island, and risks associated with trying to sell recovered materials in distant overseas markets (i.e. in China and southeast Asia)
- Logistical costs associated with aggregating material volumes in the country's least populous state, particularly for more challenging or smaller volume materials
- Difficulties in achieving economies of scale to make some infrastructure-based solutions viable in Tasmania, and the primacy this places on getting scales and locations right.

Yet while acknowledging these as challenges, stakeholders also saw the same characteristics as providing an opportunity for Tasmania to forge an independent path and develop solutions that are unique to its needs. Examples of Tasmania's leading position and capability to devise solutions that are independent of international recovery systems include:

- The decision by the City of Hobart to eradicate the use of single use plastic items and packaging in retail takeaway outlets
- Enviroinex' innovative operations based in George Town, recovering commercial and industrial polymers from recycled plastic, to supply local and mainland customers
- The Glenorchy Recovery Shop, as a leader in product and material reuse
- Kingborough council's use of an aggregate comprising recycled materials to construct a road in partnership with RED Group, Close the Loop and Downer Group
- City of Launceston's implementation of a food and garden organics processing facility and related kerbside collection service
- Dulverton Waste Management's national leadership in landfill management, recognised through the WAMA Award for Landfill Excellence in 2017.

The challenges and leadership examples referenced above demonstrate an awareness of how Tasmania's features impact existing resource recovery models and a willingness to explore new solutions. They suggest that it would be appropriate and consistent with stakeholder views for the statewide arrangement to consider circular economy principles as being core to its operations. Doing so will align the statewide arrangement with similar frameworks being adopted by mainland states and in the *National Waste Plan 2018*.

Adopting these principles would compel the arrangement to take a systemic view of opportunities to achieve greater resource efficiencies across the economy, rather than being narrowly focused on waste management and 'end of pipe' interventions. In particular, it will help ensure that some functions commonly perceived as being on the periphery of waste management – such as market development, sustainable procurement, and product design and distribution (as components of a wider product stewardship strategy) – will play a greater role where they bring clear benefits to the state and where they complement other functions. A circular economy approach helps authorise the statewide arrangement to craft partnerships with a range of stakeholders and sectors who may play a role.

The inclusion of a circular economy framework is compatible with pre-established frameworks to drive waste management outcomes. The waste hierarchy remains useful in guiding waste generators and managers without contradicting circular economy principles. Measures to improve the efficiency of waste and resource recovery markets remain relevant, including measures to stimulate investment and level the competitive market for waste-related services. The main objective is to retain clarity on the end purpose and ambition behind establishing the statewide waste management arrangement, yet take an informed and pragmatic approach to the use of functions to achieve the intended result.

A Tasmanian circular economy

Some novel avenues to influence the community arise in integrating a circular economy perspective into the statewide arrangement. These may be more difficult to substantiate if the arrangement was to pursue a narrower field of interest, purely oriented to the waste management sector.

> Maximising benefits

Taking a circular economy perspective on improving waste management and resource efficiency removes potential constraints and inefficiencies in what the arrangement sets out to achieve and how it achieves it. It will free the arrangement to focus on measures that may be further removed from the 'end of pipe' (e.g. during purchasing decisions, during production and distribution etc.) if this is where the best opportunity to get results lie.

> Regional development focus

There is the potential to explore the uptake of circular economy approaches at the regional level, where this may align with regional development plans led by joint authorities in the south, north and northwest. A rudimentary exploration of such an approach is set out in the text box at the end of this section.

> Support for council led innovation

Following City of Hobart's pioneering decision to phase out single use plastic packaging and items from retail takeaway outlets in the municipality, there is a role for the statewide arrangement to support similar trials in other local government areas. Its role could include supporting planning and design processes, and conducting research to support the dissemination of information to other councils interested in pursuing similar measures.

> Partnerships to strengthen Tasmania's strategic industries

During workshops with stakeholders, a natural relationship between Tasmania's reputation for a pristine and unique environment and industries that benefited from this environment (both in terms of branding and access to quality resources) was observed.

This suggests that key industries – food and beverage, tourism, and adventure sports being three examples – have a stake in maintaining Tasmania's reputation while ensuring the environment is adequately protected. In line with a circular economy approach, the statewide arrangement could explore forming partnerships with these sectors to influence their supply chains, customers, and other stakeholders to play an active role in the circular economy.

> Leveraging projects of statewide importance

Framing the arrangement as holding some responsibility for influencing wider economic activities across Tasmania may position its lead agencies to develop guidance to influence projects that have statewide economic significance. Examples of larger projects that attract external (i.e. Commonwealth Government) funding and involve substantial material impacts might include highway upgrades, precinct developments, and strategic industry stimulus packages.

In influencing project procurement and waste management decisions, Tasmania can take advantage of the scale of these projects to build infrastructure that can be used for other purposes. As an example, if the Kingborough Council pilot of building roads made from recycled product was replicated on a highway scale, substantial demand for these recycled materials may be secured over multiple years, while building a capacity and commercial precedent to help with engaging other markets.

Adding to the above, a circular economy approach is interesting from the position that it frames the stance of the statewide arrangement as visionary, positive, solution-oriented and partnership driven. That is, it is not purely associated with regulating, mitigating market risks, and removing barriers in the waste management industry. Its focus is instead directed towards creating opportunities in line with Tasmania's interests and willingness to invest in its own solutions.

Circular economy for regional development in Tasmania

The **Northern Tasmania Development Corporation** (NTDC) encompasses seven council areas in the northern region, and is responsible for developing the regional economy in line with the Northern Tasmania *Regional Economic Development Plan* (REDP). Targeted sectors to develop include: innovation, competitive manufacturing, health, education, food and agribusiness, tourism and the visitor economy.

The **Cradle Coast Authority's** (CCA) members include nine councils in the northwest of Tasmania. The CCA is charged with delivering on the Cradle Coast *Regional Futures Plan*, a plan for the region to capture economy opportunities and respond to challenges in the region. The plan has several sectoral priorities including: advanced manufacturing, agribusiness and aquaculture, forestry, renewable energy, health care and social assistance, and tourism.

To the project team's knowledge, a publicly available regional economic plan has not been developed for council members of the **Southern Tasmanian Councils Authority** (STCA). However, in all likelihood, each council in the region may have an economic development plan and an interest in supporting regional industries that are spread across multiple councils.

In adopting one or more circular economy partnership initiatives in the regions, the statewide arrangement could develop action plans to assist some of their stated priority sectors to adopt more innovative and sustainable practices within their operations, e.g.:

Food and agribusiness, tourism, health, education:

Characterise organic and packaging material flows to confirm the opportunity to divert organics and packaging from landfill, and/or substitute non-renewable inputs at scale. This process would test whether the volume and grade of recoverable material meet a threshold to drive investment in additional recovery infrastructure for the region. Pending scale of opportunity, there may be the option for a grants program to fund trials, upgrades and process change-overs.

Food, manufacturing, and related distribution chains:

Explore and promote the use of low impact packaging (reusable, easily recyclable/ compostable, high recycled content) in product packaging and distribution chains. Develop guidance and/or test cases for extending shelf life and durability of products without raising impacts of packaging. Potential to run research and development trials between industry and packaging suppliers.

Education, health, food and other sectors:

Development of sustainable procurement guidance and case studies by sector, including challenges, successes and lessons. Particular focus on moving from single use items to reusable items, and preferencing the use of materials with high recycled content.

Sustainable agribusiness trials:

Test and promote low impact farm techniques e.g. using soil conditioned with recovered nutrients, reusable / recoverable silage, minimal use of chemicals, responsible disposal practice.

Regional partnership and brand development:

Develop regional partnerships with sectoral commitments to progress towards full adoption of circular economy practices. In return, partners gain branding and labelling across food/agribusiness, health, and hospitality sectors; cross-promotion with regional lifestyle and tourism events (e.g. mountain biking, food and wine trails, hiking); potential fast tracking of research and development project funding.

Appendix 1 – Part A feasibility study methods

Findings for Part A of the feasibility study were prepared through five components of work:

1. Review of existing arrangements

Based on documents provided by LGAT, EPA and regional waste authorities, the project team reviewed and characterised existing arrangement for waste management in Tasmania, including:

- National contexts for waste management
- Current developments and priorities pursued by the Tasmanian Government
- Regional measures, including the workings and priorities of Waste Strategy South, Cradle Coast Waste Management Group and Northern Tasmania Waste Management Group
- Services and activities performed by local governments
- Current trends and developments in waste management in Tasmania

2. Workshops with core stakeholders

In order to ascertain areas where a statewide arrangement for waste management could best add value to existing approaches, a series of workshops were held with stakeholders. These workshops introduced the project and presented an opportunity for participants to volunteer recent achievements and prevailing challenges in waste management from their perspectives.

Table 11: Part A workshop participant organisations.

Date & location	Targeted participants	Representation achieved
13 Feb 2019 Hobart	Waste Strategy South Member council staff Member council elected representatives	Hobart Council Huon Valley Council Kingborough Council Brighton Council Derwent Valley Council Glenorchy Council
15 Feb 2019 Burnie	Cradle Coast Waste Management Group Member council staff Member council elected representatives	Devonport Council Latrobe Council Kentish Council Waratah-Wynyard Council Circular Head Council Burnie Council Central Coast Council CCWMG
20 Feb 2019 Hobart	Tasmanian Government representatives (officers and managers)	EPA Tasmania Department of State Growth
20 Feb 2019 Hobart	Resource recovery industry representatives	Veolia Waste Management Glenorchy Recovery Shop
22 Feb 2019 Launceston	North Tasmania Waste Management Group Member council staff Member council elected representatives	Launceston Council West Tamar Council George Town Council North Midlands Council Break O' Day Council Meander Valley Council NTWMG

For each workshop (see Table 11 for participating organisations), up to three priority challenges were examined in detail, to understand in what way results were unsatisfactory and what functions could be deployed at a statewide level to deliver better outcomes.

Outputs of this process fed into an Investment Logic process (below) to clarify a scope of activities for a statewide arrangement that would innately deliver benefits to Tasmania.

3. Abridged Investment Logic process

Investment Logic Maps (ILMs)

Investment Logic Maps were prepared that sought to define underlying challenges, benefits and necessary functions associated with delivering improvements to four waste management problem areas prioritised by workshop stakeholders. These problem areas include:

1. Poor cohesion in the demand for organics recovery services
2. Insecure market for investing in recovery infrastructure
3. Risks and harms incurred by tyre stockpiles and illegal dumping
4. Resource inefficient use of plastics and packaging

While other challenges were also mentioned during workshops and have been identified in regional strategic plans, the above four priorities were seen as a suitable problem set that a statewide arrangement could initially focus on, with additional priorities introduced over time.

The ILM method (with core stages set out in *Figure 2*) provides a robust logical structure as to the core needs driving investment in a statewide arrangement by different levels of government, and the public value in doing so. It can underpin the preparation of a more detailed business case for a statewide arrangement (if agreed as a future action). Outcomes of the ILM process for the four priorities are set out in Appendix 4.



Figure 2: Components of the ILM process (Source: Victorian Government, Investment Management Standard. See <https://www.dtf.vic.gov.au/infrastructure-investment/investment-management-standard>).

Collation of investment logic into a unified scope for a statewide arrangement

In the preceding stage, benefits arising from a statewide arrangement responding to four priority areas were determined. But to set out the more general functions and scope of a statewide arrangement, these specific responses need to be rendered as more general functions or roles. Thus, findings from the four ILMs are collated into a unified scope of functions that a statewide arrangement would deliver on. This functions are also recommended for phasing in according to a logical sequence of inclusion, given that the need and extent of some functions will rest upon evidence that can only be gathered once one or more prior functions are implemented.

Details and outcomes of this collation process are set out in Section 3 (and Appendix 4) and fulfil a core requirement of the project, i.e. to determine how the needs and benefits of a statewide arrangement support the case to commit to its establishment.

4. Comparison with other jurisdictions

As specified in the project brief, LGAT is seeking guidance on how other Australasian jurisdictions deliver statewide (and in New Zealand's case, national) functions to improve waste management and resource recovery, and how those statewide functions interact with regional and local public bodies.

The project team has examined arrangements in Victoria, New South Wales, Western Australia, South Australia, Queensland and New Zealand to support this interest. Strategic plans and initiatives as relevant to each jurisdiction have been reviewed and documented in this report (Section 4 and Appendix 5). Where necessary for gaining greater clarity on these arrangements, the project team has conducted limited follow up with selected jurisdictional representatives.

5. Exploration of frameworks and ambitions to deliver benefits to Tasmania

During Part A of the feasibility study and its workshop activities, stakeholders voiced clear aspirations for what a statewide arrangement should achieve in contrast to existing levels of ambition. These aspirations were not framed in terms of problems to overcome, but in terms of how the statewide arrangement could position Tasmania in various scenarios and the role of the waste and resource recovery sector to support a particular model of development.

While this may be somewhat outside the original brief provided by LGAT for completing the project, a discussion of different underlying conceptual frameworks for what the statewide arrangement sets out to achieve has been provided, with an emphasis on implications for the balance of functions and scale of benefits that may be realised.

Appendix 2 – Details of current arrangements in Tasmania

National context

The Commonwealth Government and state and territory governments released the *National Waste Policy 2018* with input from the local government sector.⁵² This policy builds on its 2009 predecessor and re-affirms the waste hierarchy as a guiding framework for decisions, while adopting circular economy principles and related strategies (see Table 12). It also responds to the lessening certainty surrounding international markets for recycled materials as characterised by greater restrictions on and quality requirements directed at recycled materials exported to China and potentially other nations.

Table 12: Principles and strategic themes adopted in the *National Waste Policy 2018*.

Principle	Strategic themes
1. Avoid waste	Waste avoidance Design Knowledge sharing, education & behaviour change
2. Improve resource recovery	Product stewardship Common approaches Improving access Increasing industry capacity
3. Increase use of recycled material and build demand and markets for recycled products	Sustainable procurement by governments Sustainable procurement by business & individuals
4. Better manage material flows to benefit human health, the environment and the economy	Plastics & packaging Sound management of chemicals & hazardous waste Reduce organic waste
5. Improve information to support innovation, guide investment and enable informed consumer decisions	Data & reporting Market development & research

Most recently, national, state and territory environment ministers have agreed to develop an action plan to implement the National Waste Policy, including funding, targets and milestones.⁵³ The national policy also reflects government roles at national, state/territory and local levels according to *Table 13*. This description should be treated as a summary of roles and areas of responsibility rather than a formal delineation of governance arrangements and duties.

⁵² Commonwealth Government, *2018 National Waste Policy: Less waste, more resources*.

⁵³ See Eighth Meeting of Environment Ministers Agreed Statement, 7 December 2018, available from: <https://www.environment.gov.au/about-us/mem>

Table 13: Roles as they relate to government levels involved with waste management policy and service delivery.

Level of government	Roles & responsibilities as described National Waste Policy
Commonwealth	<ul style="list-style-type: none"> • Ensure international obligations are met and support global outcomes • Provide national leadership and coordination • Promote innovation and develop standards • Address national market failures • Provide national data and reporting frameworks
State / territory	<ul style="list-style-type: none"> • Regulate and manage waste and resource recovery activities as a primary legislative responsibility • Develop and implement state / territory policies and strategies to give effect to this responsibility
Local councils	<ul style="list-style-type: none"> • Provide household waste, recycling and organics collection services • Manage, operate and/or procure services from landfills and recovery infrastructure • Deliver education and awareness programs • Provide and maintain public bin infrastructure and address littering • Form regional bodies to address issues of regional significance • Potentially manage compliance and enforcement in response to littering and illegal dumping

The Commonwealth Government is reviewing the national product stewardship framework including the *Product Stewardship Act 2011*. The framework is the national approach to managing the environmental impacts of products used in Australia, through mandatory, voluntary or co-voluntary arrangements. The framework is predominantly applied to managing products at their end of life, with arrangements in place for tyres, mobile phones, mercury-containing lamps, televisions and computers ('e-waste'), and other items.

Tasmanian Government actions and commitments

The Tasmanian Government delivers public functions that are essential to safeguarding human health and the environment from waste management practices, largely through the legislated responsibilities of the EPA (a division of DPIPWE). These include:

- Regulation of the management, transport, treatment and disposal of controlled wastes⁵⁴
- Regulation of sites that receive and treat or recover products from organic wastes⁵⁵
- Regulation and guidance on best practice landfill siting, operations and management^{56,57}
- Other regulatory activities as they relate to waste management and resource recovery
- Development and publication of waste education materials for the community's use.⁵⁸

Additional to these ongoing functions, DPIPWE and the EPA may act on government policy initiatives and commitments which have currently or recently come to include:

- Partnering with councils and Community Corrections to deploy Community Service Orders offenders to assist in the removal of rubbish and litter in public spaces. This is in addition to building an online reporting tool for litter, and introducing a new category of offence in the *Litter Act 2007* to apply to illegal dumping, which will involve stricter penalties.⁵⁹
- Development of a model framework for a Container Refund Scheme for Tasmania (noting that this commitment does not extend to a commitment to adopt such a scheme).
- Development of a statewide Waste Action Plan that replaces the *Tasmanian Waste and Resource Management Strategy (2009)* and delivers on needs specific to Tasmania while introducing key principles to support transition to a circular economy.

Beyond the responsibilities of DPIPWE and EPA Tasmania, other state government policy areas have some relevance to waste management and resource recovery. For example, the Tasmanian Climate Change Office within the Department of Premier and Cabinet has an interest in the reduction of greenhouse gas emissions across the economy, including the reduction of emissions from landfills.⁶⁰ Department of State Growth may also be invested in waste management settings and arrangements where they facilitate, obstruct or influence opportunities to use recovered organic materials in Tasmania's bioenergy sector.⁶¹

⁵⁴ Controlled wastes are, for the purposes of EPA's regulatory framework, hazardous wastes and include 'those wastes that exhibit toxicity, chemical or biological reactivity, environmental persistence, or the ability to bio-accumulate or enter the food chain.' See:

<https://epa.tas.gov.au/regulation/waste-management/controlled-waste>

⁵⁵ See <https://epa.tas.gov.au/regulation/waste-management/managing-organics>

⁵⁶ See <https://epa.tas.gov.au/regulation/waste-management/landfills>

⁵⁷ See <https://epa.tas.gov.au/regulation/waste-management/landfills/landfill-sustainability-guide-2004>

⁵⁸ See <https://epa.tas.gov.au/sustainability/resources-for-schools/waste-education>

⁵⁹ See Tasmanian Government, Budget Paper 2 FY2019.

⁶⁰ See Tasmanian Climate Change Office, *Climate Action 21: Tasmania's Climate Change Action Plan 2017 – 2021*.

⁶¹ See https://www.stategrowth.tas.gov.au/energy_and_resources/energy/bioenergy

Current regional approaches

In Tasmania, local councils have gone through a progressive process of self-aggregation to form three regional groups to deliver waste management efficiencies, economies of scale, standardisation, and more generally share knowledge and collaborate across a defined region where there is a perceived benefit in doing so. This regional grouping is on a voluntary basis and not all councils are current members of a waste management region. Evidence suggests that regional grouping follows from a decision made by a regional joint authority to create a committee (or similar collaborative structure) to resolve and progress a range of waste management issues on behalf of (all or a subset of) joint authority members.

An understanding of these 'regional waste management authorities'⁶² is of particular importance to the formation of a statewide arrangement, given that they represent an existing and intermediate organisational scale between local and state governments. A newly initiated statewide arrangement should add to rather than detract from the value of these existing bodies. Table 14 sets out the main characteristics of these authorities, with details of recent developments and their current focal areas described further in the text below.

To a limited extent and based on a commonly articulated need, the regional authorities have shown a precedent of coming together and resolving issues on a statewide basis. For example, the *Rethink Waste*⁶³ website and related education and communications material is budgeted for and shared across the three regions.

Other limited statewide functions, such as engagement and advocacy, may be helmed by LGAT with the assistance of the regional authorities. LGAT has also been involved in supporting waste management services at the regional scale, for example, by using its procurement capacity to support the acquisition of kerbside recycling services for a number of southern councils.

Northern Tasmania Waste Management Group (NTWMG)

The NTWMG came into being through an agreement between eight councils within the Northern Tasmania Development Corporation in 2007. Under the Regional Waste Management Agreement, the NTWMG is responsible for delivering waste and recycling programs on behalf of its seven current members. Funding for the regional authority is secured by a \$5 per tonne levy on waste being landfilled in the region, provisionally planned to increase to \$10 by 1 July 2022.

As set out in the Regional Strategic Plan 2017 – 2022, its vision is to 'collaborate and cooperate regionally to increase recycling and reduce waste to landfill, and to achieve consistent services across the northern region.' To realise this vision, the NTWMG will deliver on three goals:

- 1: Improve resource recovery
- 2: Improve council waste and recycling infrastructure, operations and data systems to best practice.
- 3: Facilitate education, engagements and partnerships about waste, recycling and reuse.

⁶² Also referred to in this document as 'regional authorities', for brevity.

⁶³ See <http://rethinkwaste.com.au/>

Cradle Coast Waste Management Group (CCWMG)

The CCWMG was formed in 2007 as a committee under the Cradle Coast Authority (CCA), and represents seven northwest councils participating in a voluntary waste levy. The CCWMG was established to provide an integrated regional approach to waste management; and implement strategies which minimise waste through increases in waste diversion and recovery.

CCWMG's revenue is secured via the regional waste levy, set at \$5 per tonne for waste disposed of in the three main landfills⁶⁴ in the Cradle Coast region (enacted as an agreement between the landfill operators and CCA). There is currently no intent to alter the levy rate from \$5 per tonne.

The CCWMG receives project management expertise and support from Dulverton Waste Management (DWM),⁶⁵ which attends CCWMG meetings as a non-voting member.

At the time of writing, CCWMG is transitioning its governance due to shortcomings perceived to derive from its status as a committee under the CCA. The current structure is seen as:

- Not fully optimising economies of scale (and savings) in regional waste service delivery
- Carrying uncertainty regarding its voluntary membership, leading to uncertainty in resourcing the regional strategy and in whom the authority represents
- Lacking the formal coordination, planning and delivery structures for regional waste management used elsewhere (such as in other Australian jurisdictions).

Following a governance review, the CCWMG will transition to a Joint Authority structure with the preferred model being a transfer of functions and assets to DWM, and expansion of DWM membership to include the remaining CCWMG councils.⁶⁶

The CCWMG works to its regional Strategic Plan 2017 – 2022, pursuing its vision to 'deliver a sustainable regional community by implementing strategies which minimise waste through diversion and recovery.' The vision will be achieved through delivering on 52 actions across four strategic areas comprised of:

- Increasing waste diversion from landfill
- Providing planning and coordination of infrastructure and services
- Developing partnerships between councils, regional groups & the state
- Engaging with the community to normalise sustainable waste management.

⁶⁴ These landfills include Dulverton Regional Waste Management Authority landfill (Devonport); Port Latta landfill (Circular Head); Lobster Creek landfill (Central Coast).

⁶⁵ DWM is itself a Joint Authority owned by a subset of Cradle Coast Authority members.

⁶⁶ This understanding is based on information provided by CCWMG committee representatives.

Waste Strategy South (WSS)

On 1 July 2016, WSS was formed as a standing committee of the Southern Tasmanian Councils Authority (STCA). Its role⁶⁷ is to facilitate strategic planning for waste management in southern Tasmania, and to implement activities outlined in the Southern Waste Management Strategy and related action plans.

The regional authority coordinates municipal and non-municipal waste minimisation programs, infrastructure developments, waste stream performance monitoring, education and marketing programs – including participation in statewide initiatives – among other functions (as set out in the amended Terms of Reference, and replicated in Table 14).

The membership of WSS currently includes twelve southern Tasmanian councils. To support the delivery of priority projects, WSS has appointed an external project manager who works with council representatives to coordinate project delivery. The WSS is distinct from NTWMG and CCWMG in that the southern regional authority does not receive funding through a waste disposal levy mechanism and instead relies on contributions of member councils via the STCA.⁶⁸

During engagement with southern Tasmanian council representatives⁶⁹, the project team was advised that WSS has been less active in recent months. This may be due in part to recent shifts in council representation and WSS Steering Committee composition. At the time of writing, no WSS steering committee meetings had been held since October 2018. Yet its terms of reference require the committee to meet on a quarterly basis, as a minimum frequency.⁷⁰

It is understood that WSS is presently implementing its action plan, focusing on sixteen priority areas grouped into:

- Advocacy
- Regional cooperation
- Waste minimisation, resource recovery and clean-up activities
- Education and engagement.⁷¹

At the same time, STCA has engaged an external consultant to review existing council strategies on waste management, to determine the potential need for and scope of a revised regional waste strategy.⁷² Final delivery of this review may occur within the timeframe of this feasibility study, potentially allowing opportunity to incorporate its findings and related STCA and council decisions into the Part B report.

⁶⁷ As stated in *WSS Terms of References, amended (June 2017)*, made available to the project team.

⁶⁸ It is understood that a levy was in place during the time of the predecessor organisation, the Southern Waste Strategy Authority.

⁶⁹ Engagement occurred leading up to the Part A workshop for southern Tasmanian councils, held on 13 February 2019.

⁷⁰ As set out in *WSS Terms of References, amended (June 2017)*, made available to the project team.

⁷¹ See *WSS Action Plan, 2017 – 2019* and *STCA Annual Report 2017/18*, prepared by STCA and made available to the project team.

⁷² Personal communication with Mr David Holman (Resonance Consulting Pty Ltd), February 2019.

Table 14: Summary of regional authority characteristics of interest.

Regional authority	Waste Strategy South	Cradle Coast Waste Management Group	North Tasmania Waste Management Group
Operating entity	Committee under the Southern Tasmanian Councils Authority (STCA).	Committee under the Cradle Coast Authority (currently transitioning to a Joint Authority in its own right).	Voluntary arrangement enacted through the Regional Waste Management Agreement between northern Tasmanian councils.
Membership	Brighton; Central Highlands; Clarence; Derwent; Glamorgan; Glenorchy; Hobart City; Huon Valley; Kingborough; Sorell; Southern Midlands; Tasman.	Burnie City; Central Coast; Circular Head; Devonport City; Kentish; Latrobe; Waratah-Wynyard.	Break O' Day; Launceston; Dorset; George Town; Meander Valley; West Tamar; Northern Midlands.
Funding model Budget	Funding arranged via STCA membership fees, comprising approx. \$200,000 pa.	\$5/tonne landfill levy, no current intent to change rate. Approx. \$380,000 pa to cover all functions.	\$5/tonne landfill levy, planned for \$7.50/tonne by 1 July 2019; \$10/tonne by 1 July 2022. Approx. \$500,000 pa to cover all functions.
Procedural objectives (from Terms of Reference)	Advocate and engage on waste related issues Municipal waste minimisation programs Waste stream control and performance monitoring Establish non-municipal reduction programs Monitor residual waste treatment measures Infrastructure development Outline regional landfill risks Education and marketing programs Identify greenhouse gas reduction opportunities Represent councils' views Seek funding, resources and partnerships	Develop strategies and plans including strategic plan and annual plans and budgets Coordinate actions within the strategic plan, including monitoring and managing budgets Source and administer government funding for agreed initiatives and projects Provide a forum for dialogue and communication sharing across sectors Be the central liaison point for waste management issues and communications affecting the region Provide a regional voice to state and federal governments and industry	Periodically review and update the Strategy Improve coordination of regional policies Develop projects in line with the Strategy Manage and deliver projects Communicate outcomes to members and the public Input into state policy, waste management issues and programs

Regional authority	Waste Strategy South	Cradle Coast Waste Management Group	North Tasmania Waste Management Group
Business planning	Operating to WSS Action Plan 2017 – 2019	Strategic Plan 2017 – 2022	Strategic Plan 2017 – 2022
Vision	<i>Not stated</i>	Deliver a sustainable regional community by implementing strategies which minimise waste through diversion and recovery.	To collaborate and cooperate regionally to increase recycling and reduce waste to landfill, and to achieve consistent services.
Current performance metrics	<i>Not stated – baseline performance currently being determined as a priority action</i>	33% recovery rate from 107,600 tonnes across the region (2015-16 data).	<i>Baseline not provided in current Strategic Plan or NTWMG Business plan</i>
Priority waste problems NB: List excludes operational or performance-related matters.	<i>Derived from action plan:</i> Household hazardous waste management Organics recovery Problem wastes (esp. asbestos, e-waste)	Organics recovery C & D, C & I waste management Household hazardous waste management Problem wastes (esp. tyres) Litter and illegal dumping	Organics recovery C & D waste management Household hazardous waste management Problem wastes (esp. e-waste, glass) Events waste, litter and illegal dumping
Operational challenges / priorities As stated in strategic plans / action plans	<i>Derived from action plan:</i> Development of a strategic plan Development of baseline performances Engagement across councils, other regional authorities and state government Engagement between councils and waste industry Data standardisation Recycling contamination issues and solutions	Infrastructure adequacy Inconsistent pricing and data reporting between members Communications between industry, councils and the CCWMG Community attitudes and lack of ownership Indefinite state government position Little coordination between state, regional and council waste strategies Governance arrangements and resourcing The lack of local and viable end markets for recovered materials	Transfer station performance and upgrades program Data quality / consistency (from operators) Promotion and awareness raising Recycling bin auditing and contamination reduction Communications between industry, councils and the NTWMG Level of engagement and education with the community

Local waste management and resource recovery services

The regional authorities ultimately work in service to their member councils, with their functions predicated on delivering improvements to and supplementing the waste related services and functions performed by those member councils. Such services may encompass, for example:⁷³

- Kerbside collection including municipal solid waste, recycling (for most council areas), and organics (for some council areas) collections, usually contracted to third parties
- Procurement of landfill disposal, recycling sorting, organics processing services
- Ownership and/or operation of landfills, transfer stations and resource recovery centres
- 'Booked' kerbside collection such as green waste and hard waste collection services
- Litter management, including education, prevention, enforcement and clean-up activities, and the installation and use of public place waste disposal and recycling bins
- Education and engagement with the community to ensure the populace is informed of appropriate waste management behaviours
- Other activities associated with park maintenance, street sweeping and corporate waste management needs.

⁷³ These action areas are reflective of services and responsibilities mentioned during engagement with Tasmanian councils over this project. They largely accord with the description of local government responsibilities as set out in Commonwealth Government's National Waste Policy 2018.

Appendix 3 – Achievements and challenges in waste management collated from workshops

Table 15: Recognised achievements collated from Part A workshops.

Achievements	Southern	Northwest	Northern	State Government	Industry
Joint contract on recycling and general commitment to improving recycling outcomes	●	●	●	●	●
Regional collaboration towards landfill consolidation and set up of transfer stations	●	●		●	●
Collaboration on promotion and education on recycling – <i>Rethink Waste</i> site and others	●	●	●	●	
Common interest in taking a circular economy approach			●	●	●
Organics processing for councils with capacity to expand over time			●		●
Organics processing for industrial generators in the region		●	●		
Household hazardous waste and paint collection scheme	●		●		
Formation of a sustainable and resilient regional organisation		●	●		
Formation of joint authority asset ownership and service provision		●			●
Diversion through reuse shop	●				●
Sustainable events management guidance and procedures	●				
Progression of single use plastics / packaging eradications	●				
E-waste collection scheme	●				
Establishment of a regional landfill levy to fund initiatives		●			
Distinct commitment to regional outlook where this is beneficial		●			
Other education via partners and targeted sectors			●		
Innovation and small-medium scale infrastructure funding and associated upgrades			●		
Regional data capture arrangements			●		
Appetite to collaborate against illegal dumping				●	
Improving landfill regulations and standards				●	
Establishment of hazardous waste management facility				●	

Table 16: Recognised challenges collated from Part A workshops.

Challenges	Southern	Northwest	Northern	State Government	Industry
Lack of planning and coordination to spur efficiently scaled and sited infrastructure	●	●	●	●	●
Lack of progress and scaled commitment to adopting FOGO services	●	●		●	●
Illegal dumping – too prevalent and not adequately regulated	●	●	●		
Tyres stockpiling – hazards and foregone recovery opportunities		●	●	●	
Products and packaging related issues not being progressed	●	●	●		
Lack of direction and coordination on moving away from and consolidating landfills	●	●			●
Lack of standards and quality in kerbside service delivery & engagement / education	●			●	●
Doubts over governance, probity, roles w.r.t. procuring services and infrastructure		●		●	●
Inconsistent, ineffective regulation – landfill operations & aftercare, controlled waste		●		●	●
Aggregation and logistical costs of offshore processing			●	●	●
Absence of state government support and/or stimulatory measures		●		●	
Lack of private capital for upgrades & infrastructure		●		●	
Data – ambiguity lack of formality on needs, sharing and acquisition		●		●	
Capacity gaps in regional function delivery	●				
Costs and coverage gaps in collection of e-waste	●				
Paints and chemicals – cost efficient collection arrangements		●			
Medical waste – consistent sectoral solutions & management processes		●			
Silage wrap and other agricultural wastes – lack of strategy			●		
Insufficient competition to drive savings, service quality and innovation			●		
Trade waste pre-treatment				●	

Appendix 4 – Functions and benefits of a statewide arrangement

This section presents Investment Logic Map (ILM) outputs for four agreed problem areas that a statewide arrangement could prioritise. In doing so, the functions necessary for that statewide arrangement to address those problems and to deliver corresponding benefits to Tasmania are determined and presented as an overall summary of the arrangement. Further details that explain the Investment Logic Map method are set out in Appendix 1.

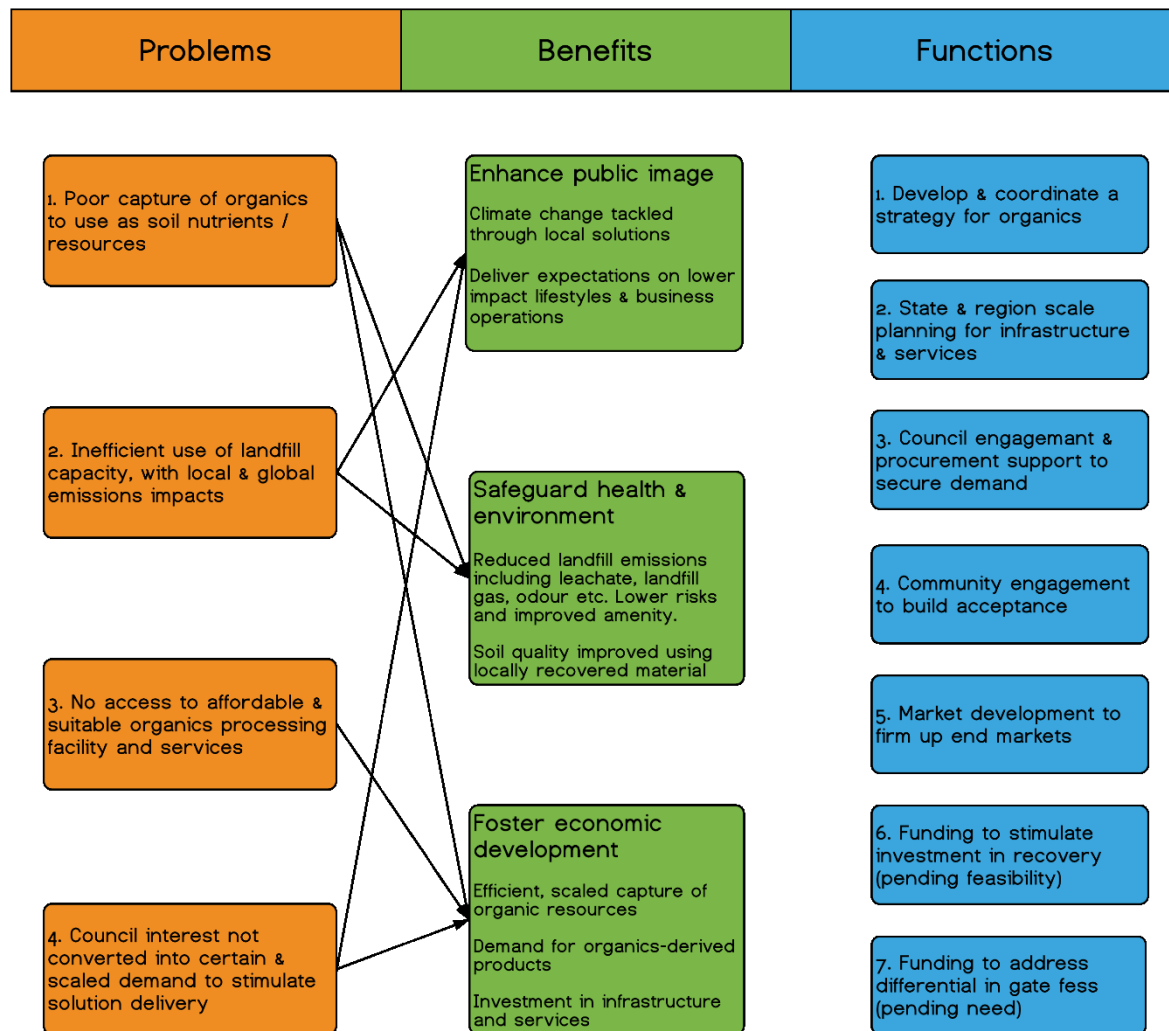
These four problem areas have been selected based on stakeholder interests across local governments, regional authorities, the Tasmanian Government and the resource recovery sector. Should one or more of the stakeholders elect to invest in a future statewide arrangement, the four individual ILM diagrams provide a schematic that sets out the relationship between individual problems, functions to deploy, and benefits delivered through overcoming the recognised problems. Parties that are invested in the statewide agreement could readily prioritise additional problems, which may involve directing the efforts of functions that are already in place and/or may involve the inclusion of new functions (potentially informed via subsequent ILM processes). In this way, the statewide arrangement can evolve into new areas of responsibility and activity in line with Tasmania's prevailing concerns.

This appendix is structured to include:

- The four ILM diagrams prepared in response to four problem areas agreed during workshops, and drawing on stakeholder views on the nature of problems, benefits and potential functions relating to those problem areas. Each diagram is accompanied by a set of bullet points that explains why a problem is perceived in that area and why action is justified.
- Functions that a statewide arrangement would need to deploy in order to address each of the four problem areas, and in doing so, improve the quality and performance of waste management activities across Tasmania. These functions define the scope of roles and informs the procedural objectives that a statewide arrangement needs to deliver on.
- Benefits collated from across the four ILM processes, that set out the value in investing in a statewide arrangement as defined. These benefits are structured according to three broad areas previously identified by LGAT, i.e.: to enhance Tasmania's image; to protect the environment and human health; and to foster economic development. In establishing a statewide arrangement, these benefits can be framed as outcomes to guide and prioritise its operations.

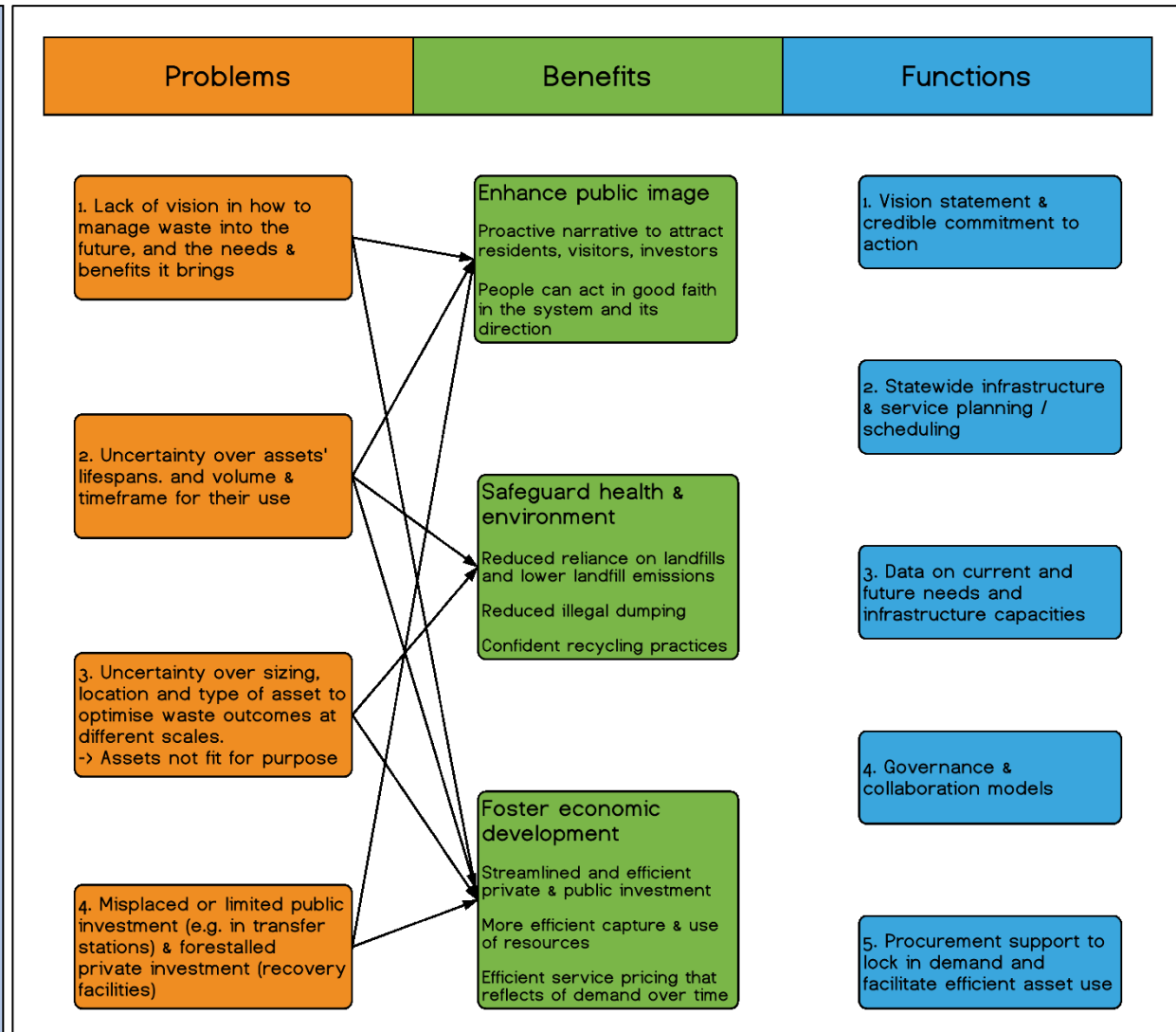
Poor cohesion in the demand for organics recovery services

- All regional authorities show an interest in pursuing organics recovery services for their members where practical. These services involve new, specialised processing facilities.
- This interest follows from a public expectation to lower landfill emissions and recover more resources for other uses. Yet most councils lack the scale of material to make organics recovery viable on their own.
- Each region is yet to convert this interest into a viable approach to market. This is partly caused by asynchronous contracts; differences in volumes and distance to infrastructure; and uncertainty concerning willingness to pay (and price acceptance).
- It is also not clear that current regions represent an optimal pooling of volumes for organics recovery in Tasmania.
- Solution providers do not have a detailed brief to respond to. They cannot proceed with building infrastructure until private capital has certainty of a long term return.
- A response to these issues would include development of a longer term strategy/plan for organics, and means to quantify and pool demand to attract solutions, supported by measures to i) identify end markets and ii) bridge any investment and pricing gaps.



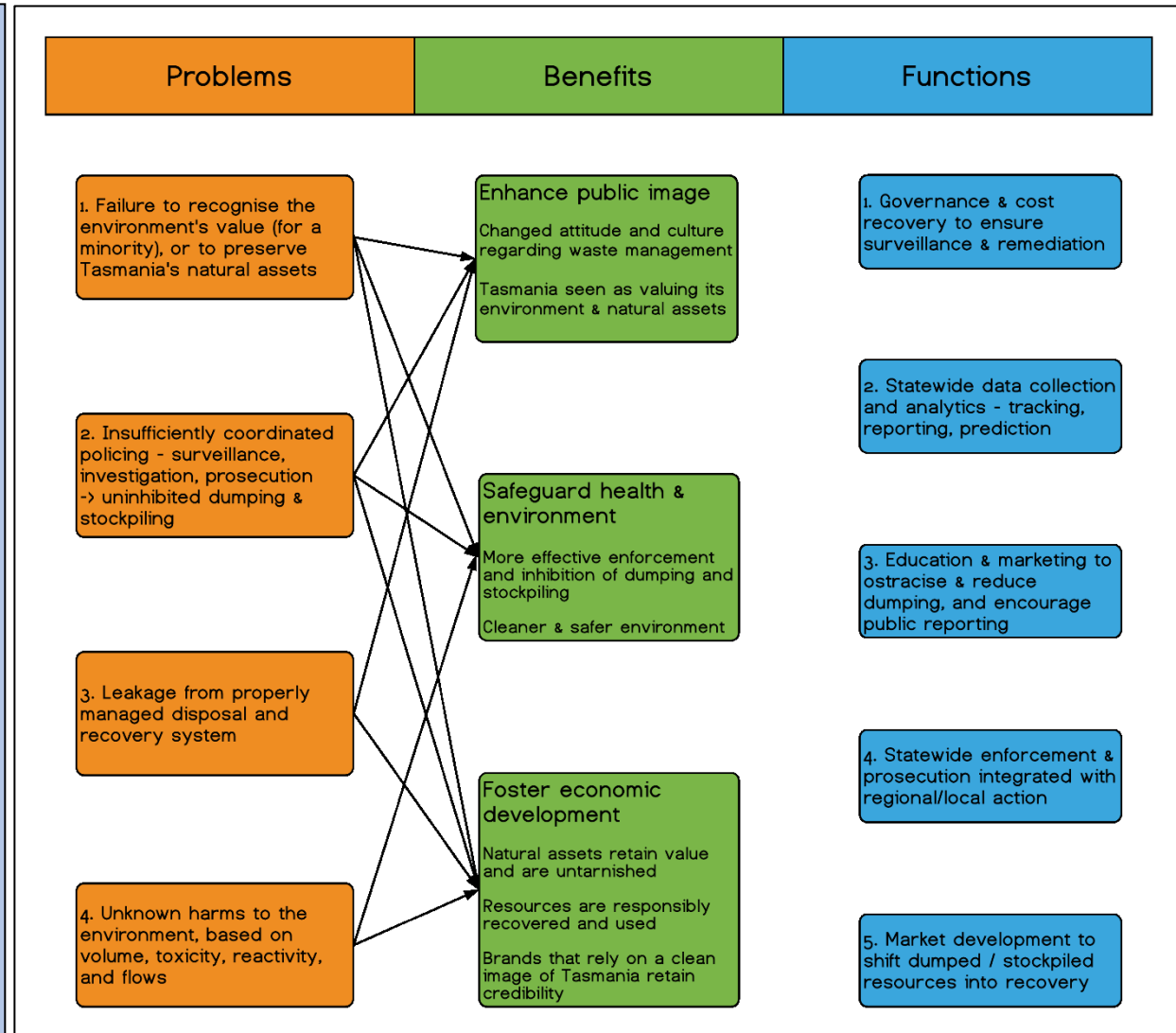
Insecure market for investing in recovery infrastructure

- Existing infrastructure is not well understood regarding its fit to Tasmania's future needs.
- This was seen to stem from i) having limited projections on waste flows and volumes, and how they align to existing capacities; and ii) having no vision or targets to set the state on a path of higher resource recovery.
- There is uncertainty as to whether existing infrastructure (i.e. landfills, transfer stations and recovery facilities) is optimal for the state. Without strategic planning, councils and the community will continue to rely on current facilities without a transition path.
- The lack of planning at larger scales means that facilities needed for recovery may be forestalled or misallocated (poorly sited or scaled, or using sub-optimal technologies).
- Investment and employment opportunities are not being realised, pricing to recover costs may be inefficient, and resources continue to be landfilled when they could be recovered.
- Further, without a strategic vision or plan, councils may fail to plan and budget ahead to procure new recovery services.
- As such, there is a need for a cluster of functions to set out and commit to a preferred path towards resource recovery.



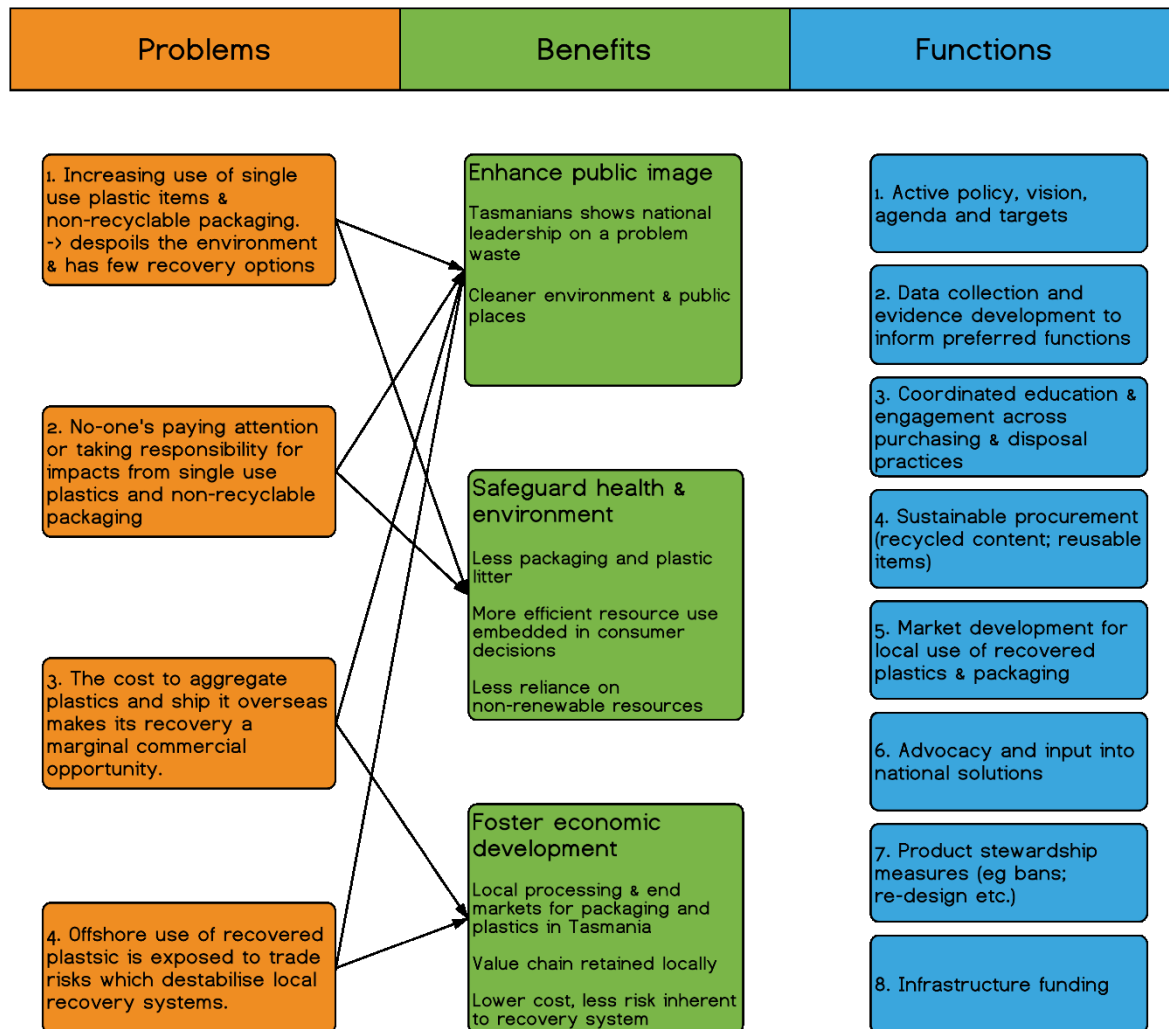
Risks and harms incurred by tyre stockpiles and illegal dumping

- Illegal dumping was raised during workshops by all stakeholders. It is caused by a minority that fail to value the environment, and use dumping as a convenience or a cost saving.
- Stockpiling on private land (e.g. tyres) was also seen as an issue to handle better, given the risk and resource opportunity it poses.
- It was expressed that, even accounting for new state measures to handle dumping, a more complete solution was needed. Surveillance and data capture is not adequate and there is not a strong disincentive to stop dumping behaviours.
- Due to inadequate funding for surveillance and remediation, councils also claimed to be poorly incentivised to investigate dumping reports due to the net cost of remediation.
- Bringing the above together, illegal dumping and stockpiling may continue without sufficient prevention and remediation measures, leading to environmental and community harms, loss of resources, and reputational damage.
- This practice is at odds with Tasmania's image of pristine environments and the ethos of land custodianship. It also imperils communities, industries and brands that rely on a clean image and clean ecosystems.

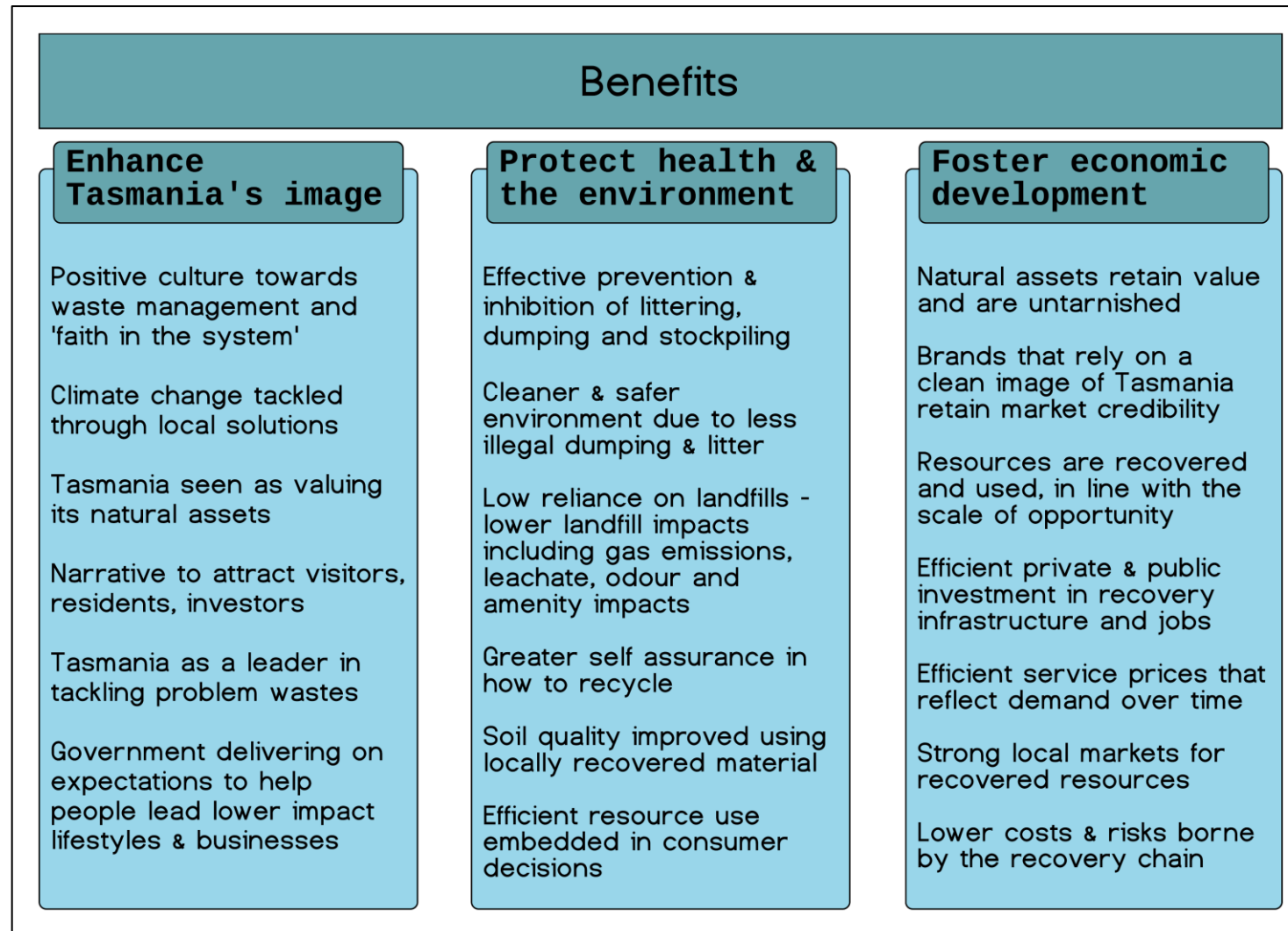


Resource inefficient use of plastics and packaging

- Stakeholders raised concerns that single use plastics and packaging were being used pervasively despite the challenges associated with commercially recovering them and the extent of plastic litter.
- There was a view that more needs to be done to manage the entry of these items into the Tasmanian economy, given the difficulty they present once in circulation. That is, where there are suitable substitutes that involve less environmental impact and/or can be recovered within Tasmania, these items should be replaced.
- At the same time, it was felt that existing recovery approaches and markets for plastics were risk exposed and costly, due to the dependence on international buyers. Local markets may have lower transport costs and be less exposed to trade risks, while retaining more value adding steps in the local economy.
- Due to these factors and the resulting impacts on the environment, economy and Tasmania's image, there is a basis for deploying functions that actively manage single use plastics and packaging waste, across their chain of custody. This would include, for example, product stewardship measures such as CDL if they have merit.



Benefits in investing in a statewide waste management arrangement, collated from ILM diagrams



Functions collated and proposed for a statewide waste management arrangement

Functions

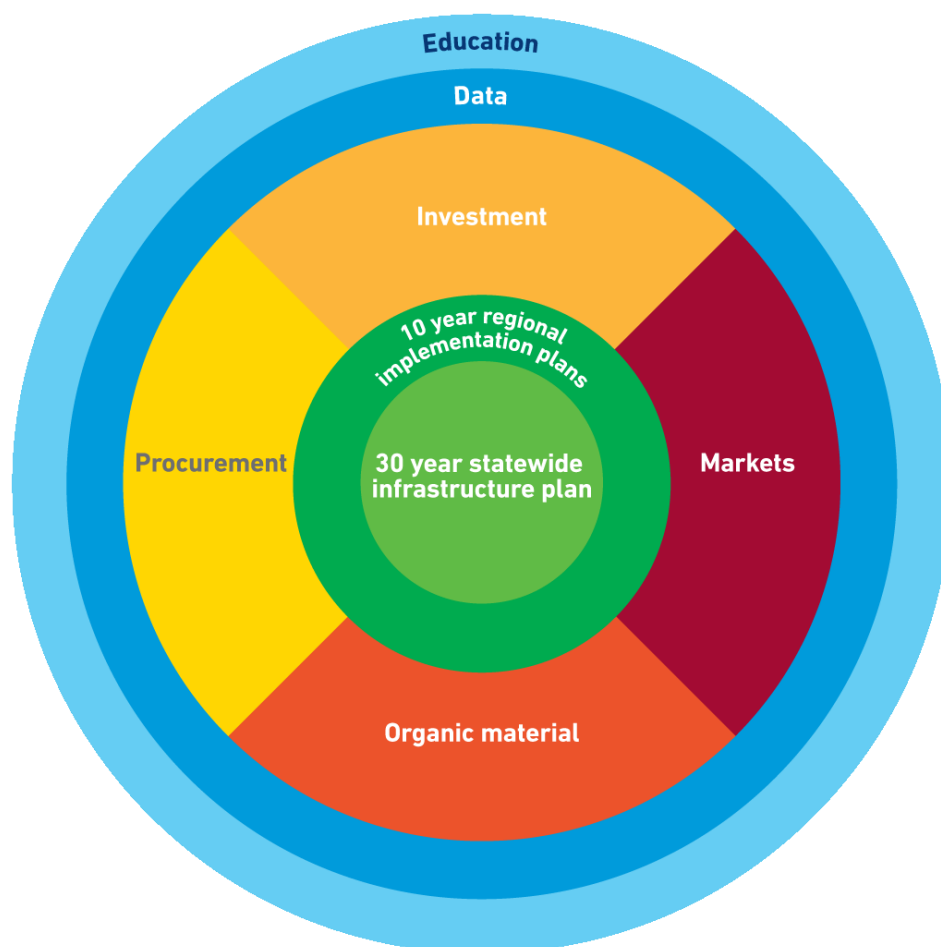
1. **Vision statement** for waste management / circular economy in Tasmania, linked to a **credible commitment** to take action.
2. **Statewide infrastructure & service planning** and scheduling.
3. **Development of strategies for priority items**, including:
 - organics from municipal and commercial sources
 - end of life tyres
 - single use plastics and non-recyclable packaging
 - others identified as a priority for Tasmania.
4. **Statewide data collection, analytics and reporting:**
 - tracking and investigating illegal dumping incidents
 - volume of waste generated and services demanded at statewide & regional scales
 - projection of capacity needs for infrastructure and services
 - to inform preferred interventions to problem materials.
5. **Governance and collaboration models** to engender trust & commitment:
 - to support surveillance & remediation of dumping sites
 - to build certainty for new services & assets to come online.
6. **Local government engagement and procurement support** to lock in demand for new services and facilitate efficient use of assets.
7. **Coordinated education, engagement and marketing:**
 - to ostracise illegal dumping and encourage reporting
 - to foster acceptance and uptake of new recovery services
 - to stimulate demand for recovered resources
 - to support best practice in local and regional services
 - to guide consumer & purchasing behaviours and decisions.
8. **Statewide enforcement and prosecution** of stockpiling in breach of licence conditions, and illegal dumping.
9. **Market development measures including sustainable procurement:**
 - to stimulate markets for resources recovered locally
 - to foster the replacement of non-recyclable and single use items with reusable / recyclable / recycled content items.
10. **Coordinated advocacy and policy input** at the national level, where national solutions are deemed to be more effective.
11. **Product stewardship of priority items** including product re-design and takeback arrangements (e.g. CDL) - *pending examination of net benefit.*
12. **Infrastructure funding** to stimulate investment in recovery assets
 - *Pending private investment gap analysis & case for public funding.*
13. **Market and/or statutory instruments** (e.g. levies, bans from landfill) to address gate fee differentials
 - *Pending an analysis of gap between gate fees for new services and willingness to pay above existing landfill rates.*

Appendix 5 – Overview of other jurisdiction arrangements

Victoria

The current Victorian Government has expressed a commitment to develop a Circular Economy policy by 2021. In the meantime the overarching strategic narrative⁷⁴ is built around the recently released *Recycling Industry Strategic Plan* (2018) and the *State Waste and Resource Recovery Infrastructure Plan* (SWRRIP) updated and released in April 2018. The SWRRIP is required under the *Environment Protection Act 1970* – Division 2AB – Victorian Waste and Resource Recovery Infrastructure Planning Framework.

Figure 3: SV's representation of the Victorian Waste and Resource Recovery Infrastructure Planning Framework.



The Department of Environment, Land, Water and Planning (DELWP) has lead portfolio responsibility for waste including policy and governance oversight across portfolio partners.

Sustainability Victoria (SV) is responsible for establishing the 30 year *State Waste and Resource Recovery Infrastructure Plan* (SWRRIP) and interaction and alignment with the seven Regional Waste and Resource Recovery Groups (RWRRGs) and their 10 year *Regional Waste and Resource Recovery Implementation Plans* (RWRRIPs). In line with legislative requirements, the

⁷⁴ The policy framework released by the previous government, *Getting Full Value*, does not presently hold status in terms of driving or directing state government priorities in waste management. As such, Victoria does not have a framework encompassing its vision, target, objectives and so on.

SWRRIP integrates with the seven regional implementation plans, and government policy seeking to provide clearer guidance for decision-makers.

EPA Victoria (EPA) is an independent statutory authority under the *Environment Protection Act 2017*⁷⁵. The Act defines the EPA's powers, duties and functions, and provides a framework for the prevention and control of air, land and water pollution, industrial noise and waste.

Tracking and evaluation of outcomes

While the Victorian planning framework for waste and resource recovery infrastructure is relatively advanced, the tracking, evaluation and reporting of outcomes is a work in progress.

From a data collection, management and reporting perspective, SV has a key data governance and oversight role for the state of Victoria. SV undertakes annual local government and industry surveys to track waste generation and recycling / recovery performance. A data portal is available with reports and projections by council, region and state.⁷⁶ According to SV:

'Sustainability Victoria's Waste Data Service collects and stores waste and recycling data from a number of sources and regularly produces statewide waste, recycling and litter data reports.'

'The service aims to strengthen and standardise existing waste and resource recovery data in Victoria, introduce new data as necessary and improve collection and sharing of data in Victoria between state and local governments and industry.'

The Victorian Auditor General's Office (VAGO) periodically reviews progress toward waste related outcomes. VAGO completed a review of the management of the Municipal and Industrial Landfill Levy in 2018⁷⁷ and is currently conducting a review 'to determine whether responsible agencies are maximising the recovery and reprocessing of resources from Victoria's waste streams.'⁷⁸

Working with local governments and regions

The model for working with local governments in Victoria is principally through the seven Regional Waste and Resource Recovery Groups (RWRRGs), statutory bodies established under Division 2AA of the *Environment Protection Act 1970*.

The RWRRGs have objectives and functions defined by the Act, principally focusing activities on:

- Regional waste and resource recovery planning, integrating with state planning priorities;
- Facilitating collective procurement and contracting for waste and resource recovery services;
- Delivery of education programs, aligned with state wide education programs
- Advising regional stakeholders (with Sustainability Victoria) on best practices for waste and resource recovery systems, facilities and services
- Supporting the Local Government Waste Forum to perform its functions

⁷⁵ Note, the *Environment Protection Act 1970* was substantially updated via passage of a new Act in 2017, which included changes to the Victorian EPA's governance and inclusion of an EPA objective.

⁷⁶ See <https://www.sustainability.vic.gov.au/Government/Victorian-Waste-data-portal> last accessed 30 March 2019.

⁷⁷ See <https://www.audit.vic.gov.au/report/managing-municipal-and-industrial-landfill-levy?show-sections=1>

⁷⁸ See <https://www.audit.vic.gov.au/report/recovering-and-reprocessing-resources-waste>

- Undertaking waste and resource recovery projects as funded by government, councils and other organisations.

Statewide environment and planning departments and agencies are also able to establish direct working arrangements with individual local governments in relation to a particular local issue of regional or state significance i.e. called in Ministerial planning assessment for state or regionally significant proposed infrastructure or similar. The EPA also regulates licensed landfills, and some other infrastructure types, with many of these assets still owned by councils.

In the past, SV has also delivered state-wide programs on a competitive basis, inviting project submissions from individual councils seeking to contribute to program outcomes. However, those competitive state programs aside, the vast majority of local government working arrangements are managed via the RWRRGs.

Each RWRRG is responsible for establishment of a Regional Waste and Resource Recovery Implementation Plan including ten year Infrastructure Schedules. There is a legislated state role in the establishment of these RWRRIPs, namely for:

- DELWP to enable Ministerial review and approval
- EPA to assess and approve scheduled landfill capacity
- SV to review the draft RWRRIP and enable integration with the SWRRIP
- The Environment Minister to approve the RWRRIPs.

The Environment Minister may also direct a Region to alter a plan at any time, and issues guidelines on how SV and Regions are to work together to integrate the SWRRIP and RWRRIPs.

Metropolitan Waste and Resource Recovery Group (MWRRG) is the largest of the RWRRGs, covering the 31 councils of metropolitan Melbourne and well over 70% of Victoria's waste generation and waste management and resource recovery activity. In addition to core funding provided to each group (outlined below), DELWP has recently sought to encourage a 'shared services' approach between MWRRG and the other six RWRRGs, whereby MWRRG hosts and provides 'shared services' with and for the other six groups across, Human Resources, Communications and Collective Procurement. The shared services model is an attempt to enable a statewide coverage where there are notable peaks and troughs in need. Rather than build multiple and discrete points of capacity and capability, the intention is to build a consolidated capability and capacity for some functions that can then be shared on an as needs basis.

Funding mechanisms

The recent VAGO review of the management of the Municipal and Industrial Landfill Levy (MILL) in Victoria provides some useful analysis of the public funding mechanism for waste management in Victoria.⁷⁹ A number of figures from the VAGO review have been reproduced here to summarise the landfill levy funding mechanism in Victoria.

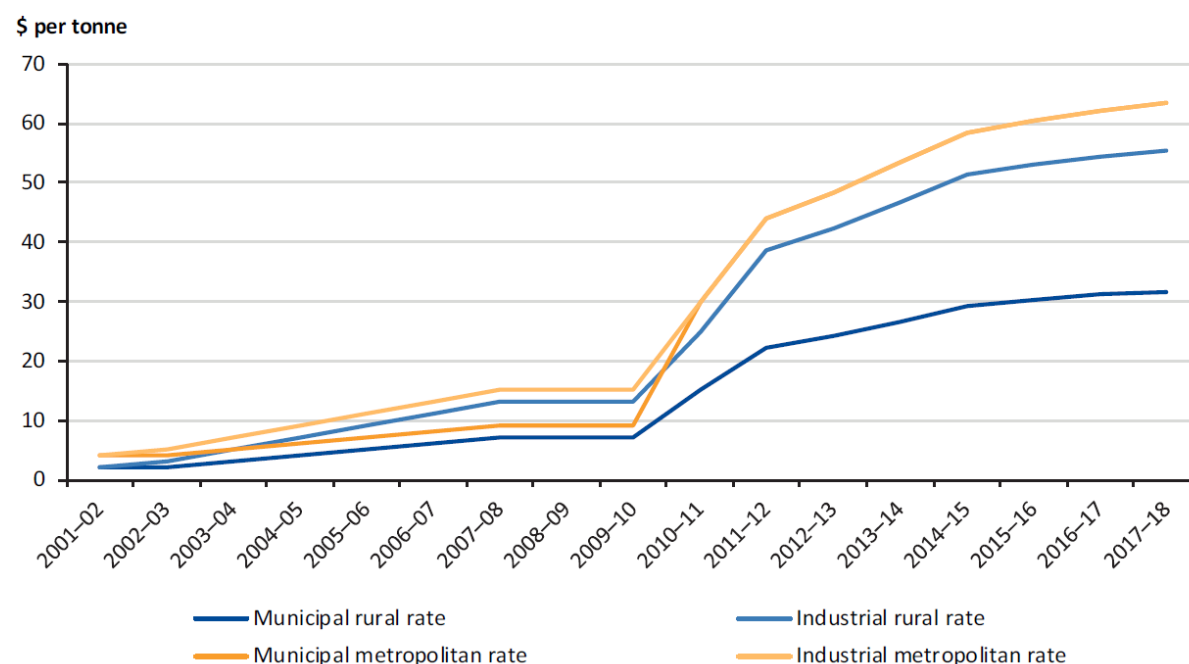
The *Environment Protection Act 1970* requires the MILL to be charged on each tonne of waste deposited at licensed landfills. The metropolitan waste levy has increased from \$2 per tonne in 1992 to its current rate of \$64.30 per tonne. MILL income for 2017–18 was approx. \$215 million.

In 2010, the government considered the metropolitan municipal waste levy of \$9 and the regional municipal waste levy of \$7 too low to drive behavioural changes. It increased the levy

⁷⁹ See <https://www.audit.vic.gov.au/report/managing-municipal-and-industrial-landfill-levy?show-sections=1§ion=32883--1-audit-context>

substantially to make recycling economically competitive compared to depositing valuable materials to landfill.

Figure 4: Trajectory of landfill levies in Victoria.⁸⁰

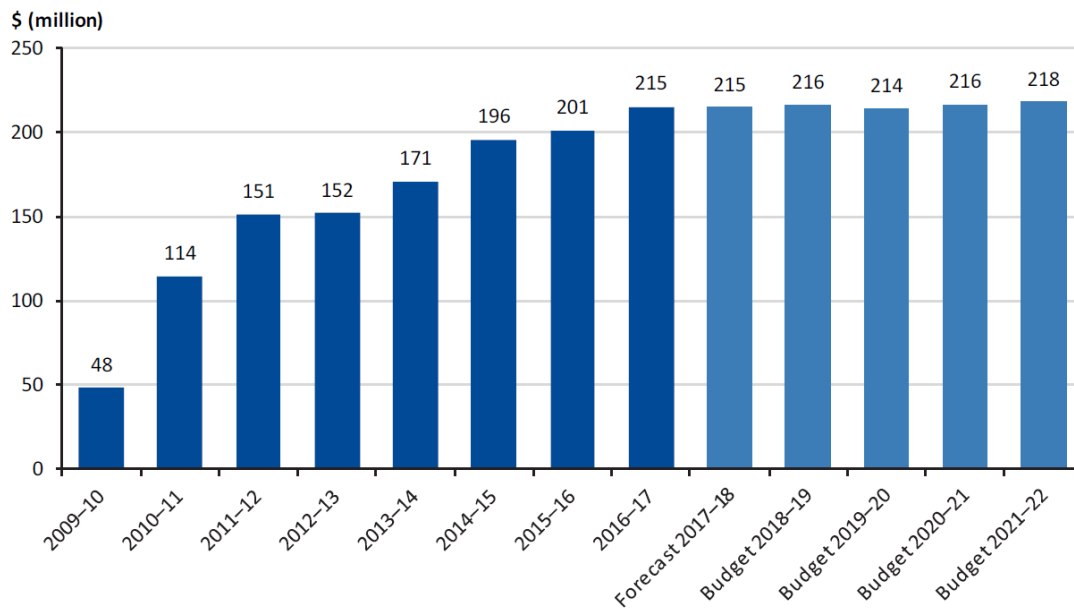


The EPA is responsible for collecting and distributing the MILL under the *Environment Protection Act 1970*. It collects the MILL from licensed landfill operators, managed by councils or commercial operators, and transfers the income to the MILL Trust Account, managed by DELWP. Section 70E(2) requires EPA to credit funds to the MILL Trust Account by the 15th day of the following quarter.

Figure 5: MILL income by financial year, 2009-10 to 2021-22 (projected).⁸¹

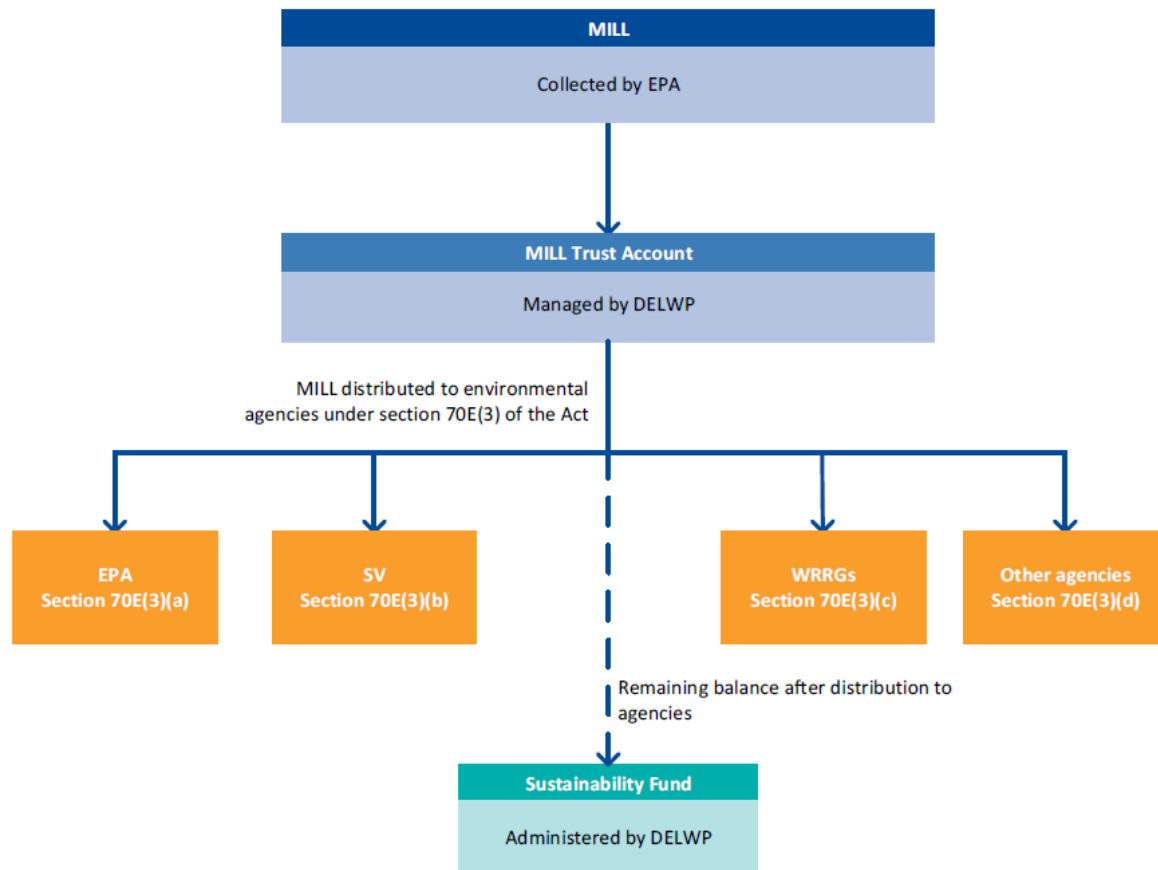
⁸⁰ Reproduced from VAGO review <https://www.audit.vic.gov.au/report/managing-municipal-and-industrial-landfill-levy?show-sections=1§ion=32883--1-audit-context> last accessed 30 March 2019

⁸¹ *Ibid.*



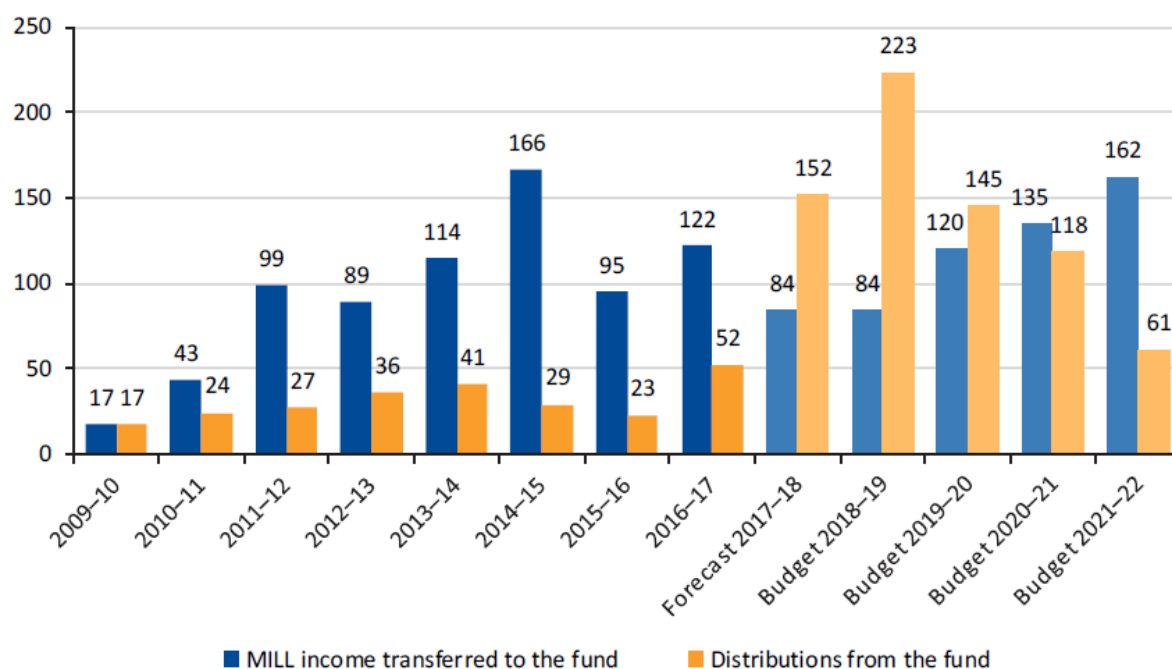
The Minister determines the amount to be paid from the MILL Trust Account, the timing of payments and period over which they are to be applied. Funding is distributed by DELWP to agencies and departments in line with Ministerial determinations. Preference is given to environmental agencies i.e. the EPA, SV and the seven WRRGs. And subsection 70E(3)(d) of the Act enables the MILL to fund 'a public entity or other body established for public purposes to be used for environment assessment, protection, restoration or improvement purposes'. The remaining funds are then transferred to the Sustainability Fund.

Figure 6: MILL distribution process summary.



The allocation of core versus program funding to any entity (i.e. a WRRG) is an important consideration. While the Minister determines a core allocation, multi-year certainty is not always provided. In addition, DELWP can coordinate budget bids on behalf of one or more WRRGs to support additional program allocations – in line with SWRRIP / RWRRIP / policy priorities – for funding via the Sustainability Fund. Any allocation from the Sustainability Fund requires Environment Minister and Premier approval.

Figure 7: Inflows and outflows of the Sustainability Fund by financial year, 2009-2010 to 2021-22 (budgeted).
\$ (million)



Most recently, allocation of program funding (from the Sustainability Fund) has been assigned in line with strategic priorities established under the *Recycling Industry Strategic Plan (2018)*. Funding was allocated across the following initiatives:

- An additional \$8.3 million to boost the Resource Recovery Infrastructure Fund to more than \$21 million. This will improve the quality of up to 100,000 tonnes of recycled material, including through better sorting and processing.
- A further \$2 million to establish and expand markets for recycled materials
- \$3.3 million for an education program to help the community recycle effectively
- \$13 million support package to help councils and industry in the short term, given China's decision to stop importing low-quality recyclable materials

Adoption of a circular economy

The current Victorian Government committed to the development of a Circular Economy policy in 2017/18 (during its first term of government). The policy is due to be completed in 2021.

Upon release, the *Recycling Industry Strategic Plan* re-iterated the commitment to developing a Circular Economy policy. Key actions within the Plan were focused on developing markets for recycled material, and in particular:

- Driving demand for product containing recycled material through government procurement
- Supporting development of end markets for recycled materials
- Industry and government collaboration to accelerate design of products and packaging for sustainability, develop standards for products and access foreign markets.

To date, DELWP has not released any further details on how the Circular Economy policy is to be shaped and opportunities for input by stakeholders.

Regulation

EPA Victoria is currently in the midst of a significant reform following changes to its powers under the *Environment Protection Act 2017* and the *Environment Protection Amendment Act 2018*.



Currently the EPA's key functions in waste are focused around:

- Development assessment / works approval processes (landfills, organics processing facilities, etc)
- Licensing of landfill cells
- Collection of the municipal and industrial landfill levy
- Regulation of hazardous waste and inter-jurisdictional (interstate) flows
- Policing illegal dumping
- Pollution abatement notices including site closure and clean-up due to potential risks to the environment i.e. fire risk from stockpiling recyclables.

Approach to some key themes

Infrastructure planning

As outlined above, Victoria sets a Waste and Resource Recovery Infrastructure Planning Framework under the *Environment Protection Act 1970* (Division 2AB). The framework sets out infrastructure planning responsibilities at the state and regional to local levels. The aim of the Framework is to achieve long-term planning for waste and resource recovery infrastructure at state and regional levels, integrated with land use and transport planning systems.

The SWRRIP provides strategic direction for managing resource recovery and waste infrastructure in Victoria for 30 years. Regional Implementation Plans describe how this will be implemented at a local and regional level.

Act	Description
<i>Environment Protection Act 1970</i>	In addition to establishing the Framework and Regional Groups, it establishes the regulatory framework for environmental protection, including in regard to waste management. It has a range of guiding principles including the wastes hierarchy. It details the content and process by which the SWRRIP and Regional Implementation Plans are developed, including specifying the way regional groups must develop infrastructure schedules within the Regional Implementation Plans.
<i>Planning and Environment Act 1987</i>	Sets out the objectives of planning in Victoria, establishes the Victorian Planning Provisions and local planning schemes including the State Planning Policy Framework which seeks to ensure that all responsible authorities work to achieve the objectives of this Act.
<i>Sustainability Victoria Act 2005</i>	Provides that a function of SV is to prepare the SWRRIP and establishes a range of functions relating to resources. These include to: <ul style="list-style-type: none"> > Plan on a statewide basis, and to facilitate managing waste in accordance with Victorian legislation and government policies > Promote throughout Victoria waste avoidance, waste reduction and recovery, reuse and recycling of resources and best practices in waste management > Facilitate the uptake of fledgling technologies, industries, markets and practices in environmental sustainability, including demonstration projects.
<i>Transport Integration Act 2010</i>	Creates a framework to provide an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible state. The SWRRIP includes a transport analysis so that transport implications and requirements can be considered.
<i>Local Government Act 1989</i>	Establishes the powers and functions of local governments in Victoria. Under the Act, the primary objective of a council is to endeavour to achieve the best outcome for the local community. A council must ensure the most efficient and effective use of resources, and ensure that it provides services in accordance with best value principles. These principles must guide local waste and resource recovery services, as well as any decision to opt into collective infrastructure procurement. Under this Act, a council can pass local laws that reinforce land use planning and municipal waste and resource recovery strategies.
<i>Climate Change Act 2017</i>	Establishes a legislated emissions target (net zero emissions by 2050) and seeks to ensure the long and short-term impacts of climate change are considered in all Victorian Government policies, programs or processes.

Integration is encouraged between state and regional infrastructure planning and there are expectations set up under the *Environment Protection Act 1970* for individual councils to perform their functions ‘...consistently with the Regional Waste and Resource Recovery Implementation Plan applying to the council’s municipal district’ (Section 50BH).

Organics processing infrastructure

The MWRRG plays a leading and strong facilitation role in delivering three collective (or group) procurements for kerbside organics processing across the 31 councils of the metropolitan region.

The resulting group contracts have between six and eleven councils providing kerbside collected garden organic material (predominantly) in one of either a north-west, south-eastern or eastern cluster. The processing contracts are typically 15 years in length, and have provided for more than one processor to provide services to a cluster group. For further information see the MWRRG website.⁸²

Melbourne's organics processing network provides organics processing facilities that will have the potential capacity by 2019 to divert over 520,000 tonnes a year of food and garden waste (from both household and commercial/industrial sources) from landfill.

The [Back to Earth](#) Initiative supports these new organics processing facilities by raising community understanding of council kerbside organic recycling.

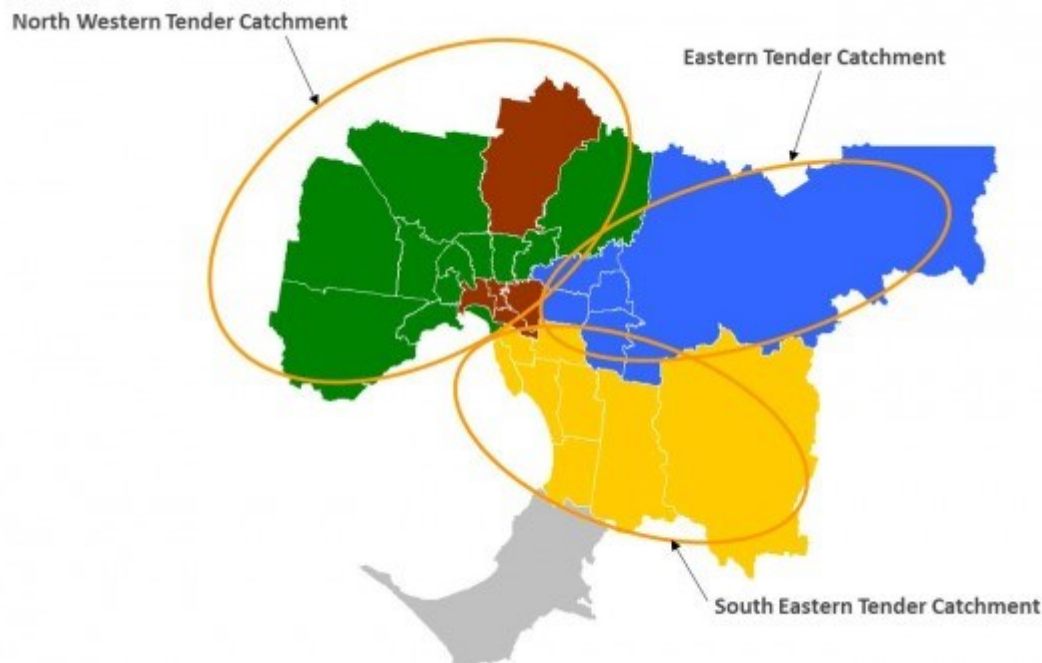


Figure 8: Tender catchments as clusters of local government areas, within the MWRRG region.

Advanced waste processing of kerbside residual waste

Victoria has also attempted to encourage council collaboration toward a procurement process for advanced waste processing of residual (kerbside garbage) waste as an alternative to landfill.

MWRRG has been funded by the Sustainability Fund to prepare a business case for advanced waste processing infrastructure that can process Melbourne's kerbside waste instead of sending it straight to landfill. Further details are available on MWRRG's website.⁸³

⁸² See <https://www.mwrrg.vic.gov.au/procurement/organics-processing-procurement/>

⁸³ See <https://www.mwrrg.vic.gov.au/procurement/advanced-waste-processing/>

Most recently, the MWRRG has been working with 15 councils in the south-east and east of metropolitan Melbourne to explore a business case for advanced waste processing toward a decision to move into a procurement process to start in 2019.

E-waste

In 2014, the Victorian Government committed to banning e-waste from landfill. E-waste is growing three times faster than general municipal waste in Australia, putting pressure on waste management infrastructure and the environment. Banning e-waste from landfill will increase resource recovery and supports jobs and investment in the recycling industry.

SV is working with DELWP, the EPA and RWRRGs to design an effective approach to banning e-waste from landfill in Victoria. SV is also delivering a \$16.5 million program to support upgrades to e-waste collection and storage facilities across Victoria, and to deliver a statewide e-waste education campaign.

New South Wales

In 2016, the NSW EPA released the \$337 million extension to *Waste Less Recycle More 2017 – 2021* strategy to improve waste management and resource recovery in that state. This extension builds on the 2014 – 2017 strategy under the same name, involving a \$465.7 million outlay. The two periods of *Waste Less Recycle More* together deliver on the NSW *Waste Avoidance and Resource Recovery Strategy 2014 – 2021*.

Working with local governments and regions

The model for working with local governments involves a substantial outlay of state government funding to cover:

- Funding for regional coordinators, infrastructure planning and delivery of regional waste strategies and action plans (\$12.5 m)
- Support for regional / rural councils with landfill consolidation and closure, upgrading of transfer stations, and improvements to small landfills servicing rural communities (\$5 m)
- Support for local recycling initiatives (\$39 m)
- Funding for sustainable waste management in Aboriginal communities (\$4 m)
- Recycling campaign, audits, training, support and capacity building for councils (\$9.5 m).

In NSW, waste and resource recovery planning and strategy development occurs at a regional level, either working via Regional Organisations of Councils or 'voluntary regional waste groups' (where ROCs are not available or suitable). Additional to direct funding (as above), the EPA dedicates staff resources and prepares guidance (e.g. 'Regional waste avoidance and resource recovery strategy guidance', released in 2014).

Other initiatives⁸⁴ applied to support local government include the annual preparation and release of local government surveys regarding waste management and resource recovery; support for voluntary regional waste groups under RenewNSW⁸⁵; guidance on addressing illegal dumping; preparation of litter case studies and reports; and interim funding to councils (\$2.5 m) in response to Chinese Government policy changes.

⁸⁴ See <https://www.epa.nsw.gov.au/your-environment/waste/local-council-operations> and <https://www.epa.nsw.gov.au/your-environment/waste/local-council-operations/local-councils>

⁸⁵ See <http://www.renewnsw.com.au/about-renew-nsw/>

Jurisdiction: New South Wales

Currently active strategic framework: Waste Avoidance & Resource Recovery 2014 – 2021

Vision:

The primary goal is to enable all of the NSW community to improve environment and community well-being by reducing the environmental impact of waste and using resources more efficiently.

Using resources efficiently and keeping materials circulating in the productive economy can also help to create jobs and grow the NSW economy.

Objectives:

Reduce the rate of waste generation per capita

Increase recycling rates across all waste streams

- municipal solid waste from 52% (in 2010–11) to 70%
- commercial and industrial waste from 57% (in 2010–11) to 70%
- construction and demolition waste from 75% (in 2010–11) to 80%

By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%

Establish or upgrade 86 drop off facilities for problem household waste

Implement the NSW Illegal Dumping Strategy 2014–16 to reduce the incidence of illegal dumping

By 2016–17, reduce litter items by 40 % (versus 2011–12) levels, continue to reduce to 2021–22

Objectives will be met through funding / investment in infrastructure, services and education.

Headline initiatives under the extension of *Waste Less Recycle More* 2017 – 2021:

Major components of the extension include (each over four years):

- \$70 million to a local government waste and resource recovery program
- \$65 million for illegal dumping prevention and enforcement
- \$57 million to address household problem waste
- \$48 million to deliver a waste and recycling infrastructure fund
- \$35.5 million to deliver an organics infrastructure fund and program
- \$30 million to deliver a litter prevention and enforcement program
- \$22.5 million to deliver a business recycling program
- \$5 million to deliver a recycling innovation fund
- \$4 million to fund a Head of Asbestos Coordination Authority

Funding mechanisms

In NSW, a two tiered levy structure is in place. In the extended metropolitan region a levy of \$141.20 per tonne applies; whereas the levy within the regional levy area comes to \$81.30. There is no levy in place for outer rural settlements. These rates are CPI adjusted each year.⁸⁶

An interesting component of the levy is that it applies to licensed recycling, processing and waste storage facilities for all waste received at the facility. This liability will be waived as the waste is sent off-site for lawful re-use or disposal. Payment will only be triggered where:

- Waste is stockpiled on-site for more than 12 months, unless the waste has been processed at the facility to a standard required by a resource recovery order
- Waste is stockpiled above lawful tonnage limits
- Waste is transported for unlawful disposal or unlawful reuse.

During the transition to this arrangement the EPA was providing 50 % funding for new weighbridges on existing licensed recycling and storage facilities.

The two periods of *Waste Less Recycle More* represent the major reinvestments of landfill levies into waste management and resource recovery (with a combined outlay of \$803 m). This is viewed as insufficient in the face of the current recycling sector challenges (i.e. exposed by changes in Chinese Government policy).⁸⁷

It is estimated that one sixth to one third of NSW landfill levy revenue is reinvested into the sector. An estimated \$133 million more landfill levy revenue above baseline projections is expected to be collected over the current year (and an additional \$727 million over the coming four years). This is partly due to the Chinese policy, as well as a construction boom and the re-establishment of a landfill levy in Queensland.

⁸⁶ See <https://www.epa.nsw.gov.au/your-environment/waste/waste-levy>

⁸⁷ See <https://www.illawarramercury.com.au/story/5941084/waste-levy-should-fund-recycling-efforts/> (dated 6 March 2019) and <https://www.smh.com.au/environment/sustainability/nsw-waste-crisis-landfill-levy-gains-20190104-p50pp3.html> (dated 6 January 2019).

Adoption of a circular economy

The 2014 *Waste Avoidance and Resource Recovery Strategy* did not substantially introduce circular economy concepts to NSW. In 2018, NSW Government released its circular economy policy statement and discussion paper. It anticipates incorporating circular economy principles and practices into the next waste strategy for NSW, scheduled for 2021-2022:

- State roles will include incorporating the circular economy into waste and resource recovery policy, advocating for and removing barriers to innovation, leading by example.
- Priorities identified include:

Supporting innovation	Procurement	Quality, consistent recycling
Valuing organics	Product stewardship	Responsible packaging
Support reuse & repair	Better design	

The statement also sets out the application of a number of core principles, as in the table below.

Principles	Description
Minimise consumption of finite resources	Replacing raw materials with recovered and recycled products, which will reduce demand for finite natural resources and minimise the environmental impacts from the extraction and processing of these raw materials.
Decouple economic growth from resource consumption	Maximising the value of resources by keeping materials in use for as long as possible, which will decouple economic growth from resource use.
Design out waste and pollution	<p>Innovating product design for longevity, re-use, remanufacture and resource recovery to make it easier for customers to share, repair or upgrade goods.</p> <p>Extending the lifespan of existing landfills and reducing demand for new landfills, which will reduce the emission of greenhouse gases and other pollutants.</p> <p>Increasing service offerings as well as increased remanufacture and repair activities to minimise the amount of resources used and avoid the generation of waste.</p>
Keep products and materials in use	<p>Developing local markets for high quality post-consumer recycled materials, which keeps materials in use for longer, reduces dependency on international markets and reduces the impacts of commodity price fluctuations.</p> <p>Improving quality of collected materials and improving sorting of these materials so they are available for re-use.</p> <p>Increasing access to goods for the NSW populace through a focus on sharing, re-use and repair, with benefits for low-income households.</p>
Innovate in resource efficiency, give preference to higher order re-use and repair opportunities	<p>Capturing value from recycling resources in new ways, including innovative business models and services across different sectors</p> <p>Innovating technologies that increase resource efficiency and preference higher value re-use opportunities, leading to a range of benefits compared to the "take, make and dispose" status quo</p>
Create new circular economy jobs	<p>Creating jobs in new manufacturing, service and resource recovery sectors associated with recycling, re-use, remanufacturing and increased service offerings</p> <p>Encouraging repair and refurbishment, re-use and recycling and creating new skills and employment opportunities in these industries</p>

Regulation

In NSW, regulation is led by the EPA which presently functions as an independent regulator.⁸⁸ The EPA's role in protecting the environment is set out in the *Protection of the Environment Operations Act 1997*.

More specific regulation of the waste sector is set out in the *Protection of the Environment Operations (Waste) Regulations 2014*.⁸⁹ Details include:

- Clarifying obligations of generators, processors and consumers of waste materials
- Making it an automatic offence to pollute land with certain types of waste
- Identifying responsibilities of generators and processors of waste, including landfills
- Introduces a land pollution defence at unlicensed landfills for operators who maintain certain minimum operational standards
- Expanding the range of materials eligible for a levy deduction
- Lower thresholds for licensing to ensure a level playing field across the waste industry
- Allowing the EPA to efficiently, cost-effectively gather robust data on waste movements
- Addressing compliance issues regarding unlawful transport, storage and disposal of end-of-life tyres
- Increasing the EPA's oversight of the removal, transport and disposal of asbestos waste.
- Stopping operators who pretend to recycle but instead stockpile or dispose waste illegally
- Providing reliable, up-to-date data that is essential to developing effective waste policies.

Approach to some key themes

Illegal dumping

The Regional Illegal Dumping (RID) Squad is partnership between EPA and 41 local councils. The RID Squad model is a funding and operational partnership between the EPA and councils to identify and prosecute small scale dumping. Under the next phase of WLRM, \$65 million over four years is allocated to the Illegal Dumping, Clean-up, Prevention and Waste Enforcement Fund to fund:

- The RID Squad
- Local clean up and prevention programs targeting illegal dumping hot spots
- Aboriginal land illegal dumping clean up and prevention programs
- Waste licensing and tracking operations
- RIDOnline, the public illegal dumping reporting portal and state wide database
- Proactive enforcement campaigns targeting rogue waste operators.

The NSW EPA has also published guidance for local governments on the appropriate response and regulatory framework concerning illegal dumping 'Crack down on illegal dumping'.

⁸⁸ During part of its history, the EPA was incorporated into the Department of Environment and Conservation. See <https://www.epa.nsw.gov.au/about-us/our-organisation/about-nsw-epa>

⁸⁹ See <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-regulations/poeo-waste-reg-2014>

Western Australia

Earlier in 2019, the Western Australian Government released its *Waste Avoidance and Resource Recovery Strategy 2030*. This strategy was prepared by the Waste Authority, a body established under the *Waste Avoidance and Resource Recovery Act 2007*. At the time of release, WA had the highest rate of waste generation per capita (2,623 kg based on 2014-15 data) across the nation and the equal second lowest rate of resource recovery (at 48 % in 2014-15). The Strategy represents the implementation of a statewide arrangement for WA into effect.

Jurisdiction: Western Australia

Currently active strategic framework: Waste Avoidance & Resource Recovery Strategy 2030

Vision:

Western Australia will become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste

Objectives:

Avoid – Western Australians generate less waste

By 2025 – generation per capita reduced by 10 % compared to 2014-15 levels

By 230 – generation per capita reduced by 20 % compared to 2014-15 levels

Recover – Western Australians recover more value and resources from waste

By 2025 – Increase material recovery to 70 % (from 48 % in 2014-15)

By 2030 – Increase material recovery to 75 % (from 48 % in 2014-15)

From 2020 – Recover energy only from residual waste

Protect – Western Australians protect the environment by managing waste responsibly

By 2030 – No more than 15 % of waste generated in Perth and Peel region is landfilled

By 2030 – All waste is managed and/or disposed to better practice facilities

Progress against targets scheduled for review after five years.

Headline initiatives (see Action Plan for more details):

- 3-bin kerbside FOGO system throughout Peel / Perth by 2025, backed by financial instruments
- Local government waste plans aligned to the statewide Strategy
- Sustainable government procurement to preference recycled content, stimulate local demand
- Provide funding to increase the recovery of energy and materials (with materials preferred)
- Review the scope and application of the landfill levy to ensure alignment with the Strategy, establishing a schedule of adjusted levy rates (including a five year projection)
- Statewide communications plan to support resource recovery, avoidance and proper disposal
- Review and update data collection and reporting systems (see **Waste Data Strategy**)
- Perform a strategic review of waste infrastructure including landfills by 2020 to guide future infrastructure development (see **State Waste Infrastructure Plan**)

5 Key principles:

1. Shared responsibility and partnership – owning your impact
2. Innovation and growth
3. Better practice
4. Waste as a resource
5. Intergenerational equity

Adoption of a circular economy

Inherent challenges to better waste management, as set out in the Strategy, include:

- Geographic size and logistical costs associated with a large and sparsely populated state – few opportunities for economies of scale outside of Perth and Peel region
- Distance from markets for sorted products
- Vast regional and remote areas (and difficulty to monitor illegal dumping)
- Reliance on (non-renewable) mineral and resource industries

The waste industry is estimated to contribute \$10 billion to the WA economy each year. Through the Strategy, a transition to a circular economy seen as an opportunity to harness more value from recovered materials and drive investment in infrastructure and jobs.

'A sustainable circular economy also means we manage waste to protect the environment. Such management needs to occur through the entire life cycle – from design and manufacture, through to use and then disposal options consistent with the waste hierarchy.'
(p. 10 of the Strategy).

The circular economy is seen as an important concept to apply in WA due to the distance from international markets and high transport costs. It is preferable to move to a local circular economy to retain the value of materials in WA and to support local jobs and infrastructure. In this sense, it shares some barriers with Tasmania (i.e. challenging geography and intrinsic barriers to accessing international markets).

Media, television and Chinese Government policy provided political drivers for DWER to be proactive and ambitious in devising the strategy. This was reinforced by an auditor-general's report in 2016 that strongly criticised delivery of the previous strategy. Thus the authorising environment was strong and included support from the Premier. This was used to justify deploying more effective instruments; having a more coordinated approach to government's response (i.e. not just involving DWER and the Waste Authority); and being more willing to use upstream and downstream measures in line with circular economy principles.

Working with local government

The *Waste and Resource Recovery Strategy 2030* recognises the roles of different levels of government. While the Waste Authority will lead the strategy's implementation, including administration of the **Waste Avoidance and Resource Recovery Account**, local government are important partners through development and adoption of **local government waste plans**.

The plans will bring together different aspects of local government waste management and provide a means to align waste services and contracts with the strategy and better practice. Other initiatives to assist local government are included, e.g. support for the uptake of FOGO across the Perth and Peel regions. DWER also acknowledged that councils need to be more consistent in services and education to reduce confusion amongst households. There are also some challenges for councils that have entered into waste to energy contracts, given that energy recovery sits low on the waste hierarchy, and materials recovery is a more preferable outcome.

The Strategy does not reference regional councils to a great extent, and they are not recognised to the extent of local councils. But it may be assumed that member councils collectivise some initiatives, synchronise the roll out of newer services, and plan infrastructure and transfer stations on a regional basis (e.g. the SMRC has invested in and operates its own regional MRF).

Priority materials as reflected in the Strategy:

- Construction and demolition waste
- Food and garden organics
- Metals
- Paper and cardboard
- Glass
- Plastics
- Textiles
- Hazardous waste

Foundational strategies/functional priorities

1. Information and data – to provide high quality information to the community, government and industry to inform decision making
2. Regulation and policy – to provide a level playing field and deliver efficient and effective outcomes
3. Education – to underpin behaviour change approaches to avoid, recover and protect, for waste generators and managers
4. Planning – to provide support and guidance for waste service planning, infrastructure and land use.

A range of other strategies that target the three themes of *Avoid*, *Recover* and *Protect* are set out in the Strategy, under the headings of Enabling Infrastructure, Knowledge and Incentives.

Funding mechanisms – the waste levy

The *Waste Avoidance and Resource Recovery (WARR) Levy Act 2007* provides for a levy to be applied to waste received at metropolitan landfills and metropolitan waste received at landfills outside the metropolitan area, accounting for about 70 % of the waste disposed in landfill across the state. The waste levy for putrescible waste is \$70 per tonne and for inert waste is \$105 per cubic metre (approx. \$70 per tonne).

In accordance with the *Waste Avoidance and Resource Recovery Act 2007 (WARR Act)*, each year the Minister for Environment must allocate not less than 25 % of the forecast levy amount to the WARR Account. Funds in the WARR Account are applied to programs for the management, reduction, reuse, recycling, monitoring or measurement of waste and to support implementation of the Waste Strategy. The remaining 75 % goes to consolidated revenue.

The scope and application of the waste levy is presently under review to ensure it adequately supports the strategy and to give a five year schedule of waste levy rates (as recently announced).⁹⁰

⁹⁰ See <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/03/Waste-levy-capped-for-2019-20.aspx>.

Regulation

In Western Australia, Department of Water and Environmental Regulation (DWER) has responsibility to monitor, investigate and prosecute illegal dumping activities. This is set out in Section 49A of the *Environment Protection Act 1986*.

DWER maintains a specialist Illegal Dumping Team that runs partnerships with community organisations, government agencies, and local governments to address illegal dumping. It is actively involved in media campaigns and education programs to guide the community and to discourage dumping practices.

DWER regulates the transportation of controlled wastes (i.e. liquid wastes, hazardous wastes, and other wastes such as used tyres that are designated as controlled) that may cause environmental or health risks. It does so through the application of the *Environmental Protection (Controlled Waste) Regulations 2004*. The regulations provide for the licensing of carriers, drivers and vehicles involved in the transportation of controlled wastes on public roads.

Under Part V of the *Environment Protection Act 1986* DWER is responsible for regulating emissions to the environment from scheduled premises, through the works approval and licensing process. This would include licensing and works approvals for waste treatment, processing and disposal facilities that may incur emissions to the environment.

Other key themes –

Organics / AWRRTs

The Western Australian Government has placed a priority on food and garden organics services, and will assist its roll out across councils in Perth and Peel regions.

Product stewardship

At present, the WA Government plans to roll out a 10 cent container deposit scheme by 2020.⁹¹

Infrastructure planning

A review of current waste and resource recovery infrastructure and its fitness in light of Western Australia's new targets is a priority action under the new strategy.

⁹¹ Final details including return locations are yet to be worked out.

<https://www.der.wa.gov.au/our-work/programs/111-wa-container-deposit-scheme>

South Australia

Zero Waste South Australia released *South Australia's Waste Strategy 2015 – 2020* to set out the vision, objectives and pathway to realise the state's preferred waste management and resource recovery practices and outcomes over that period. Green Industries SA (ZWSA's successor) carries responsibility for overseeing implementation of this strategy. Its role⁹² includes:

- Keeping SA at the forefront of innovation in the waste, recycling and resource recovery
- Delivering reduced waste to landfill and increasing the State's capacity for recycling
- Building the State's capability and resilience in the area of disaster waste management

Adoption of a circular economy⁹³

The waste management and resource recovery industry is significant to the SA economy, with an annual turnover of around \$1 billion and GSP contribution of more than \$500 million. It employs around 4,800 people, mainly in the local government and the private sector.

The amount of recovered materials exported is small compared to local re-processing. 87 % of recovered material is reprocessed in SA, 8 % is processed interstate, and 5 % is exported. The material exported overseas is made up of mainly cardboard and paper (48 %), and metal (41 %). Other materials included plastics, tyres and textiles.

Due to the changes in Chinese Government importing rules, it is likely that some of recycling facilities will need to adjust to meet the new contamination specifications set for recycled paper, cardboard and plastics if they want to regain entry into that market. Some recycling facilities that export materials to reprocessing plants interstate will be less affected. Alternative overseas markets (e.g. Thailand, Malaysia, and Vietnam) may offer a partial or interim solution, but local and national solutions will need to play a greater role into the future.

Working with local government

The South Australian strategy has a strong flavour of working with partners, including local government and regional resource management groups. Roles⁹⁴ defined for these sectors include:

- **Local government regional resource management groups** – regional planning for municipal waste and implementation of state-wide programs relating to waste environmental risk
- **Local governments** – planning, management, operation, collection, service provision education and promotion programs. Councils work cooperatively with Zero Waste SA to establish regional waste management plans.

The above regional authorities have been voluntarily formed by councils on a regional basis, drawing on regional subsidiary provisions in the *Local Government Act 1999*. Examples include Adelaide Hills Regional Waste Management Authority, North Adelaide Waste Management Authority, Southern Region Waste Management Authority and others.

⁹² See <https://www.greenindustries.sa.gov.au/about-us>

⁹³ Details from this section derived from <https://www.greenindustries.sa.gov.au/chinas-new-policy-on-waste-and-recycling>

⁹⁴ From *South Australia's Waste Strategy 2015 – 2020*, p. 19-22.

Jurisdiction: South Australia

Currently active strategic framework: South Australia's Waste Strategy 2015 – 2020

Vision:

Achieving a resource efficient economy, whereby the needs of society are provided with fewer inputs through a range of supporting strategies, measures and processes.

Mission:

To achieve a resource efficient South Australia, by minimising SA's demand on primary resources, and maximising the reuse, recycling and recovery of materials, using the framework of the waste management hierarchy and the principles of ecologically sustainable development

Objectives:

1. A resource efficient economy where the best or full value is secured from products and materials produced, consumed and recovered across the State
2. A stable and efficient market for investors through a clear policy framework providing a solid platform for investment decisions
3. A culture enabling the South Australian community, businesses and institutions to continue and strengthen their role in implementing zero waste strategies and programs locally, nationally and internationally.

Targets:

Waste to landfill: 35 % reduction in volumes compared to 2003 baseline, by 2020.

MSW diversion target (Adelaide only): 70 % diversion

C&I diversion target (Adelaide only): 80 % diversion

C&D diversion target (Adelaide only): 90 % diversion

Per capita generation target: 5 % reduction by 2020 (from 2015 baseline)

Strategic priority areas

- Illegal dumping
- Product stewardship of problem materials
- Industry development
- Research and development
- Energy from waste
- Data – Measurement, analysis, evaluation and reporting

Framework and principles in implementing the strategy:

The decision making framework for the strategy is the waste hierarchy. Principles are:

- Ecologically sustainable development
- Best practice methods and standards
- Open dialogue with local government, industry and the community.

Funding mechanisms

A levy of \$100/tonne in metropolitan areas and \$50/tonne in non-metropolitan areas applies to waste received at licensed disposal sites (i.e. landfills).⁹⁵ Rates will rise by 3 % in 2019-20.

According to the current version of the *Green Industries SA Act 2004* (Section 17), 50 % of this revenue is transferred into the Green Industries Fund (formerly the Waste to Resources Fund) to support improved waste management and recovery practices and initiatives relating to climate change. This includes a loan function⁹⁶, in partnership with Innovyz Pty Ltd.

In recent years the LGA of South Australia has raised concerns that the fund currently holds over \$100 million and has not been adequately used to fund local projects. According to the Green Industries SA annual report for FY2018, approx. \$31 million in landfill levy revenue was paid into the Green Industries Fund (representing 50 % of the landfill levy revenue). Cash and cash equivalents held by the agency as at 30 June 2018 totalled \$120 million.

Where the SA Government is of the view that there are strong markets for discarded materials, it may issue a ban against sending those materials to landfill in the absence of prior treatment.

Regulation

The South Australian EPA is an independent authority that regulates waste in order to avoid or minimise adverse effects on human health and the environment, and promote resource recovery.

The EPA administers environment protection policies, codes of practice, licences, environment improvement plans, guidelines and enforcement tools. It considers the Waste Strategy when determining matters related to licences and referred development applications. The EPA is currently implementing a number of strategic priorities including a Digital Strategy 2016 – 2020 and a Partnerships and Engagement Framework 2015 – 2018.

Approach to some key themes –

Organics / AWRRTs

The diversion of organics from household waste is promoted through the Waste Strategy 2015 – 2020. Alternative Waste Treatment (AWT) and energy from waste technologies are recognised as a necessary part of the resource recovery system in the current strategy.

Product stewardship

CDL has been in place in South Australia since 1977. Current priorities in product stewardship include the consideration of addressing single use plastics and being more proactive in influencing the design of products and packaging to support reuse and recovery.

Infrastructure planning

SA has released an infrastructure plan for waste management and resource recovery, to guide decisions and investments associated with future infrastructure needs.

⁹⁵ See https://www.epa.sa.gov.au/business_and_industry/waste-levy

⁹⁶ See <https://www.greenindustries.sa.gov.au/loan-scheme> and GISA annual report FY2018 p. 22.

Queensland

In February 2019, the Queensland Government released its draft *Waste and Resource Recovery Strategy* for public consultation. This draft strategy adopts a timeframe to 2050 and follows on from a formal review of the previous strategy, which was completed in 2018.

From the Foreword, it is evident that the Queensland Government is adopting a strategic investment approach to the sector: 'We also want to see strategic investment in diverse and innovative resource recovery technologies and markets to produce high-value products and generate economic benefits for the state.' Beyond economic stimulus drivers for the strategy, the need to more efficiently use landfill assets and to develop a resilient system in the face of international market stability are also acknowledged. Whole of government delivery will be led by the Department of Environment and Science (DES) in partnership with the Department of State Development, Manufacturing, Infrastructure and Planning.

The strategy follows a number of reinforcing initiatives including introduction of a CDL scheme; the banning of single use plastic bags; \$100 m in funding; and legislation for a landfill levy.

Jurisdiction: Queensland

Currently active strategic framework: Draft Waste and Resource Recovery Strategy

Vision:

Our vision is for Queensland to become a zero-waste society, where waste is avoided, reused and recycled to the greatest possible extent.

Strategic investment in diverse and innovative resource recovery technologies and markets will produce high-value products and generate economic benefits for the state.

Mission:

To achieve a resource efficient South Australia, by minimising SA's demand on primary resources, and maximising the reuse, recycling and recovery of materials, using the framework of the waste management hierarchy and the principles of ecologically sustainable development

Objectives:

Targets for 2050:

- Municipal solid (i.e. household) waste reduced by 25 %, relative to 2017/18 levels
- No more than 10 % of waste sent to landfill
- Recycling rate of 75 % across all waste types by 2050, compared with 45 % in 2017/18.
(NB: Interim targets at 2025, 2030 and 2040 are also set out in the draft Strategy)

Key actions:

- Work with councils to raise awareness about recycling options available locally
- Deliver information / education programs
- Support councils to improve collection services and tackle problem wastes
- Set minimum recycled-content standards for products
- Work with businesses to reduce excessive packaging and make packaging waste recyclable
- Make public purchasing decisions that avoid waste and support recycled content
- Support research into new uses and markets for recycled materials
- Support infrastructure investment in locations to help improve access to recycling.

Additional to its vision and targets, the draft Strategy identifies three strategic priorities:

1. Reducing the impact of waste on the environment and communities.
Focused on addressing the dependence on landfills; littering; illegal dumping; and unnecessary transport of waste materials.
2. Transitioning towards a circular economy for waste.
Focused on the recovery of materials as resources and stimulating demand; improving data quality to support commercial decisions; and clarifying waste to energy policies.
3. Building economic opportunity.
Focused on supporting and stimulating investment in the resource recovery sector and strengthening markets for end products.

Actions within the draft strategy fall under each of these priorities.

Adoption of circular economy

The draft Waste Strategy acknowledges the need to move towards a more circular economy and invest accordingly. It is one of three strategic priorities that propel the draft Strategy forward through action.

Considerable detail is provided on how a circular economy would be pursued in Queensland, emphasising a commitment to supporting purchasing decisions and recovery / manufacturing infrastructure and technologies to stimulate the shift to a circular model. The government proposes to supplement these positive measures and stabilise feedstocks by banning selected items (on a statewide or regional basis as suitable) from landfill where there is a means to recover and reuse those items within the economy. As the Queensland Government has enacted a CDL scheme and a ban on single use plastic bags, there is indication that the government may adopt upstream measures to aid this transition.

In conjunction with the waste hierarchy, the Queensland Government uses the circular economy as a justification for expanding the use of waste to energy technologies in preference to disposal in landfills, while treating it as less preferable relative to materials recovery.

On 25 February 2019, the Queensland Government announced \$150,000 funding for a Circular Economy Lab (CE Lab) in Brisbane. According to the media release, the 'CE Lab will be to consolidate industry, research and government partnerships and expertise to identify and deliver three initial circular economy pilot projects. These partnerships, once operational, will focus on understanding what actions Queensland can take today to manage the transition to the circular economy of tomorrow.'

Working with local government

The Queensland Government commits to statewide waste infrastructure planning, along with the development of region-specific plans to deliver recycling and resource recovery facilities appropriate to these areas. This is proposed to be in collaboration with local councils.

Each of the three strategic priorities for the draft Strategy identifies a number of actions for local government, in line with their roles in collection, disposal and recovery service provision; infrastructure procurement; investigation of littering and dumping; community education; and product procurement. It suggests that the role and relationships of local councils in waste management and resource recovery has been actively considered and accommodated.

Strategic Priority 1	Strategic Priority 2	Strategic Priority 3
<ul style="list-style-type: none"> • Support and contribute to targets and actions under Litter and Illegal Dumping: A plan for Queensland. • Deliver litter and illegal dumping interventions within local communities and at targeted hotspots. • Support delivery of waste education through existing networks. • Improve or close redundant landfill facilities. 	<ul style="list-style-type: none"> • Optimise waste collection services. • Improve community understanding about recycling and waste avoidance. • Develop consistent messaging in delivery of services between councils. 	<ul style="list-style-type: none"> • Collaborate with state govt planning on provisions to optimise land use and transport planning. • Take a regional approach to infrastructure planning and collaboration. • Collaborate across councils to create economies of scale and meet multiple infrastructure needs. • Invest in improved infrastructure and standards for council run facilities. • Rationalise waste facilities

Selected actions in the draft Strategy show state government support for councils including:

- Developing a coherent whole-of-state and regional infrastructure-plan for waste incorporating requirements for remote, regional and metropolitan areas.
- Developing a consistent procurement contract framework for waste management and resource recovery services
- Considering how both state and local government procurement can stimulate demand for recycled material manufactured in Queensland
- Working with partners to develop nationally consistent quality standards for product packaging and reduce excessive product packaging and the use of composite or non-recyclable packaging
- Working with business, local government and community organisations to deliver information and education programs that support avoidance, reuse, recycling and proper handling of waste
- Working with local government to reduce litter and illegal dumping through public education and information programs and capacity building, coupled with data collection and research to support compliance and enforcement
- Auditing and assessing the quality of existing landfill infrastructure, and identify facilities that are not compliant with the landfill guidelines and regulations
- Establishing an effective environmental regulation and compliance monitoring framework that supports the efficient operation of the market to protect the environment and human health, provide a level playing field for all market participants, and help stabilise council services.

Funding mechanisms

On 14 February 2019, the Queensland Government announced that legislation to reinstate a landfill levy has passed into law.⁹⁷ The levy for general solid waste is set at \$75 per tonne, and will apply to waste disposed to landfills in a designated area comprising 39 of Queensland's 77 LGAs and 90 % of its population. Liability for the levy commences from 1 July 2019. Drivers for the levy include the need to reinstate a price on landfilling to deter disposal and transporting of waste from NSW, and generation of revenues to reinvest back into suitable initiatives.

According to the media release, 70 % of the landfill levy revenue 'will go back to councils, the waste industry, scheme start-up, and environmental programs'. Further details are not specified. This commitment to a levy and usage of levy funds follows a commitment of \$100 million towards waste and resource recovery projects from September 2018. This commitment spanned:

- Capital grants for new processing infrastructure and technology projects
- Incentives to attract or expand major resource recovery operations
- Funding for other capital-intensive, long term projects.

Priority materials

- Built environment waste, including construction and demolition waste
- Food and agricultural waste
- Plastics
- Waste electrical equipment and batteries
- Glass
- Paper and cardboard
- Tyres
- Textiles

Regulation

In Queensland, the Department of Environment and Science (DES) directly regulates environmental protection. The Environment component within the portfolio is responsible for:

- Protecting and managing parks, forests and the Great Barrier Reef
- Enhancing Queensland's ecosystems
- Protecting significant heritage places
- Avoiding, minimising or mitigating impacts to the environment.

Under the *Environment Protection Act* 1994, DES has responsibility for enforcing compliance with environmental regulation, issuing licences and so on. Many of the activities regulated as waste management fall under the scope of the *Environment Protection Regulation 2008* and captured under Schedule 2 of the regulation as a prescribed environmentally relevant activity (or ERA).

⁹⁷ Queensland Government media release, *Palaszczuk Government passes laws to improve waste management*, 14 February 2019.

Approach to some key themes

Illegal dumping

Dumping is a dominant theme under the first strategic priority of the draft Strategy. There is a clear attempt to lift a number of intervention components to better deal with illegal dumping including information and data systems; regulation; surveillance systems; and guidance to councils as partners. The primary approach to addressing littering and illegal dumping is covered in the 2013 action plan *Litter and Illegal Dumping: A plan for Queensland*.

Organics / AWRRTs

Queensland Government suggests a willingness for waste to energy to play a role in resource recovery, although carrying less priority compared to materials recovery. The government will provide guidance to clarify its position regarding waste to energy and its relationship to the wider Queensland strategy.

Product stewardship / tyres / CDL

- Single use plastic bags banned
- CDL scheme in place
- Stated willingness to apply landfill bans and other measures to influence the recovery of items entering into the Queensland economy.

Infrastructure planning

The draft Strategy includes a clear commitment to undertake infrastructure planning at state and regional levels, collaborating with local councils.

New Zealand

New Zealand's waste strategy has been in place since 2010. The *New Zealand Waste Strategy 2010* has two goals oriented around risk management and more efficient use of materials.

1. Reducing the harmful effects of waste

When planning waste management and minimisation activities, local government, businesses and communities should assess the risk of harm to the environment and human health from waste to identify and take action on those wastes of greatest concern.

2. Improving the efficiency of resource use

When planning waste management and minimisation activities, local government, businesses and communities should improve the efficiency of resource use to reduce the impact on the environment and human health and capitalise on potential economic benefits.

The strategy does not employ explicit targets to understand how successfully the strategy has been implemented, and has otherwise been challenged for being an unsuitable response to New Zealand's waste management needs. Territorial authorities have expressed a need for:⁹⁸

- The current strategy to be reviewed in order to set a clear agenda for action
- The landfill levy to be both increased and expanded in its coverage
- Data management frameworks to be improved
- The introduction of a container deposit scheme
- The treatment of tyres⁹⁹, e-waste, agricultural chemicals and plastics as priority streams to address through action – while NZ has provisions to enact stewardship frameworks on selected items, this capacity has not been substantially applied to many products.

Other gaps in the NZ approach include the absence of an entity charged with nationally coordinating and leading/shaping the direction of waste management (other than legal and administrative duties); and building an awareness of the current system state.

Adoption of a circular economy

Given that the current NZ waste strategy was released some ten years ago, it does not substantially involve circular economy principles. Ministry for Environment webpages provide some detail on the concept of a circular economy and its interpretation for New Zealand. However, commitments to a circular economy are somewhat limited and include a prioritisation of circular economy applications for funding from the Waste Management Fund.¹⁰⁰

While this focus may be a positive step regarding the integration of circular economy, it may be noted that some aspects of a circular economy (e.g. development of recycled content standards and specifications; the uptake of sustainable procurement; product re-design etc.) may not be efficiently supported through a grants mechanism.

⁹⁸ See Territorial Authorities Forum (a part of WasteMINZ), *Local Government Waste Management Manifesto*, 2018.

<https://www.wasteminz.org.nz/2018/01/local-government-waste-management-manifesto-released/>

⁹⁹ Unlike in Australia, whole end-of-life tyres may be disposed of in landfills in New Zealand.

¹⁰⁰ See <https://www.mfe.govt.nz/waste/circular-economy>

Working with local government

The strategy identifies roles for regional councils and territorial governments as follows (excerpt from the New Zealand Waste Strategy 2010):

Regional councils (i.e. 11 regions) – Regional councils regulate the environmental effects of waste disposal facilities by granting and monitoring resource consents (consents given to third parties when undertaking an activity that may affect the environment). Regional councils can also play an important role in facilitating a collaborative approach to waste management and minimisation planning amongst territorial authorities.

Territorial authorities (i.e. 67 city and district councils) – Territorial authorities have a statutory responsibility to promote effective and efficient waste management and minimisation within their district, in accordance with the *Waste Minimisation Act 2008*. Under the Act all territorial authorities must review their waste management and minimisation plans (WMMPs) by 1 July 2012 and every six years thereafter. When reviewing their WMMPs territorial authorities must have regard to the New Zealand Waste Strategy. Territorial authorities should use their WMMPs to guide their spending of their portion of the waste disposal levy in ways that maximise opportunities to minimise waste.

To support territorial authorities in preparing WMMPs, the NZ Government released its 'Waste assessments and waste management and minimisation planning: A guide for territorial authorities' guidance document in 2015. However, there is no national framework that gives a level of structure or direction around what WMMPs should achieve and need to align to. Similarly, there does not appear to be a process to take account of existing infrastructure across the country and to determine its fitness for future needs.

Funding mechanisms

A waste disposal levy of \$10 per tonne (plus GST) on all waste disposed of at disposal facilities has been in place since 1 July 2009. The purpose of this levy is to:

- Raise revenue to promote and achieve waste minimisation
- Recognise the cost of waste disposal on the environment, society and the economy by increasing the cost of waste disposal.

50 % of levy funds are apportioned to territorial authorities on a population basis, to be spent to promote or achieve waste minimisation in accordance with each territorial authority's WMMP.

The NZ Government has released its 'Waste levy spending guidelines for territorial authorities' to assist decision making and planning associated with this proportion of levy revenues.

The other 50 % of the funds raised by the levy money (minus administration costs) forms the Waste Minimisation Fund, which is used to invest in waste minimisation / recovery infrastructure and systems; and build educational and promotional capacity. Annual expenditures from the fund are in the order of \$10 million, with funding eligible for: feasibility or investigative projects; infrastructure projects; services projects; and education and awareness projects.

It may be observed that the New Zealand landfill levy is of a lower magnitude than those currently in place in mainland Australian jurisdictions. There has been some criticism that this

does not provide an adequate deterrence to disposal in landfill, and that a higher levy rate should be considered.¹⁰¹

In its recent 'manifesto', the Territorial Authority forum (a local government group within WasteMINZ, the waste management sector organisation of NZ), notes that the levy only applies to the 30 % of waste disposed of in Class 1 landfills, and advocates a gradual increase in the levy to \$140 per tonne (for all wastes disposed of in landfill) by 2025.

Regulation

Waste management is predominantly regulated through territorial authorities and the Ministry for Environment in NZ. The Ministry for Environment also administers the *Waste Management Act 2008* and is responsible for managing and distributing landfill levy collection and distribution activities.

Under the Act, territorial authorities have provision to enact bylaws and issue penalties to support compliance with their WMMPs, and to appoint enforcement officers to police compliance with the Act. The NZ Government can similarly appoint enforcement officers to serve infringement notices where the Act has been breached, including where territorial authorities have failed to comply with their responsibilities under the Act.

¹⁰¹ See <https://www.thefifthstate.com.au/urbanism/environment/circular-economy-new-zealand/>