

# SNOWY VALLEYS COUNCIL ZERO WASTE STRATEGY 2019-2030

TRANSITIONING FROM DISPOSING WASTE TO PROCESSING RESOURCES



**Snowy Valleys**  
Council

## ACKNOWLEDGEMENTS:

The process of creating the Snowy Valleys Zero Waste Strategy has been a highly collaborative process. The background information explaining the current landscape was sourced mostly from on-the-ground conversations with council workers, operators, team leaders and key contractors. The people in this process also captured the foundation of what is possible to achieve in this council through their pride, interest and willingness to change. The councillors united approval for action towards waste enabled this strategy to be ambitious, think long-term and invite innovation into the council area.

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## GLOSSARY AND ACRONYMS

C&D	Construction and demolition is solid, mostly inert waste generated by processes such as building and demolition
C&I	Commercial and industrial is solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (hospitals, schools, government offices) but not MSW (municipal solid waste) or C&D waste
CDS	Container Deposit Scheme also known as Earn and Return is the initiative whereby drinking containers can be returned at a value of 10c per item
Circular economy	An alternative to a traditional linear economy (make, use, dispose of) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life
Co-mingled recycling	Recyclable material that can be placed into a kerbside recycling bin including plastic containers, paper/cardboard, tins, cans, liquid paperboard (LPB) and glass bottles
CRC	Community recycling centres
Diversion rate	The proportion of all recycled materials or those otherwise recovered (through an energy-from-waste facility) compared to the total amount of waste generated
E-waste	End-of-life electronic equipment such as televisions, computers, mobile phones, stereos and small electrical appliances (but not whitegoods)
FOGO	Food organics and garden organics
Hazardous material	Sometimes referred to as problem waste and includes batteries, fluorescent tubes/bulbs, household chemicals, paints, medical waste/needles, oils, e-waste and batteries often collected through CRC sites
JO	Joint organisations
MoU	Memorandum of understanding
MRF	Material recovery facility
MSW	Municipal solid waste generated in households and by local government operations including kerbside services, parks and gardens, street sweeping and public bin
NP	National Parks (NSW)
PEF	Processed engineered fuel is a product generated from non-recyclable material with high calorific value for the application as a fuel in cement kilns

REROC	Riverina Eastern Regional Organisation of Councils
Residual waste	Waste that can be disposed of in the red-lidded kerbside bin, that theoretically does not include any material that could be recycled through a co-mingled recycling, FOGO or community recycling facilities
Resource Recovery	Includes all recycling, additional to kerbside recycling, such as the recovery of steel, green waste, FOGO waste, CRC material, tyres, mattresses, C&D material and so forth.
ROC	Regional Organisation of Councils
Sustainable Development	Economic development that does not deplete natural resource, meets the needs of the current generation without compromising the ability for future generations to do the same
SVC	Snowy Valleys Council
WARR	Waste and Resource Recovery Strategy (EPA NSW)
Waste Hierarchy	A principle describing seven levels of waste program priorities from most preferable to least preferable
WtE	Waste to energy is the process of generating energy, heat or electricity from non-recyclable waste

## EXECUTIVE SUMMARY

The Snowy Valleys Council recognise that zero waste to landfill is the future goal that will create a resilient community where resources are processed and utilised rather than disposed of as waste.

Whilst current waste and recycling data is lacking in detail, it is known that more than 4,000 tonnes per annum is being sent to landfill at a financial and environmental cost and additionally resource recovery rates are poor. Within known waste generation data, less than 30% is currently recovered compared to 50-60% currently recovered nationally as well as the state of NSW having a recovery goal of 70% by 2021.

This strategy establishes that business as usual is no longer viable financially, socially, technologically, environmentally or regulatory. Rather, by thinking ahead this strategy will build resilience for the region, generate employment and align the council with state and national policy targets.

The SMART goals are set proportionally (%) for each stream (residual waste, recycling, organics) and each sector in three milestones: 2025, 2030 and 2050.

- Reduce per capita kerbside waste generation (kg/hh/week/service)
- Increase recycling rates for MSW, C&I and C&D waste

Essentially, the goal is to eliminate residual waste, decrease total waste and achieve 100% recycling rates for other material.

Five themes have been developed to address the sections of current waste management practices that are needing improvements for future changes and 62 actions with implementation timeframes and performance indicators have been developed to achieve the below targets.

Table 1: Strategy summary with themes and targets.

Themes	Section	Target
Deliver waste education and advocate for behavioural change	1.1	Create an education and engagement plan
	1.2	The awareness of the importance of waste avoidance specifically addressing avoidable food waste and plastic packaging increases throughout the community
	1.3	Education is provided to the community about the financial and environmental cost of landfill and the lifecycle of recycling streams
	1.4	Inaccurate beliefs of recycling being landfilled are stopped and the strength of existing recycling processes is showcased
	1.5	Council advocate to increase product stewardship programs through the National Waste Policy
	1.6	Council remain regionally connected with either a Joint Organisation (JO) or Regional Organisation of Councils (ROC)
	1.7	The role of waste education within council is strategically integrated into a position
Maximise resource recovery	2.1	Garden and unavoidable food waste from landfill is minimised and ultimately eliminated
	2.2	Avoidable food waste from landfill is minimised both through avoidance and diversion
	2.3	Co-mingled recyclables from landfill is minimised and ultimately eliminated
	2.4	Reuse and service economy is promoted and supported in the council
	2.5	Council transfer station establishes procedures and areas to process and distribute C&D material
	2.6	Illegal dumping and littering is strategically documented, discouraged and ultimately declines
	2.7	Public place disposal points including streets, parks and events offer recycling and eventually organic recycling bins
Innovation & circularity	3.1	Council leads by example for market stimulation
	3.2	Council leads on the establishment of a circular economy for organic processing
	3.3	Council promote the establishment of local reprocessing and manufacturing business using recycled content, C&D material and other waste streams
	3.4	Seek an alternative to landfill for short-medium term end of life waste streams
Data capture and intelligent decision making	4.1	Waste generation accounting and reporting is established and maintained
	4.2	A cross-sector, cross waste stream baseline data set is collected to enable the tracking of goals success and target resources for improvement
	4.3	Review the Seasonal Waste Weekends program
Service and infrastructure harmonisation and upgrade	5.1	Create an infrastructure plan
	5.2	Service provision is the same at all council operated transfer stations and the logistical servicing of the site is managed in-house at optimum efficiency
	5.3	Asbestos disposal is addressed
	5.4	Tumut Waste & Recycling Centre is upgraded to best practice management and the MRF provides improved processing capability and capacity
	5.5	Council forms a waste division

CONTENTS

1.	INTRODUCTION.....	9
2.	PRINCIPLES .....	10
2.1.	Circularity.....	10
2.2.	Waste hierarchy.....	11
2.3.	Pricing principles.....	11
3.	RELEVANT POLICY AND LEGISLATION.....	11
3.1.	IPCC Waste Management Emissions & UN Sustainable Development Goals 2005 .....	13
3.2.	National Waste Policy 2018.....	14
3.3.	NSW Waste Avoidance and Resource Recovery Strategy 2014–21.....	16
3.3.1.	Waste Less Recycle More funding .....	16
3.4.	REROC Regional Waste Management & Resource Recovery Strategy 2014-2021.....	18
3.5.	Snowy Valleys Community Strategic Plan 2028 .....	19
4.	WHERE ARE WE NOW .....	20
4.1.	Council profile.....	20
4.2.	Waste and recycling generation .....	20
4.2.1.	Landfilling .....	21
4.2.1.	Recycling .....	22
4.3.	Existing Waste Services .....	24
4.3.1.	Rate waste charges .....	24
4.3.2.	Kerbside collection.....	24
4.3.3.	Waste Depots.....	24
4.3.4.	Regional Contracts .....	25
4.4.	Special collections .....	26
4.4.1.	Seasonal Waste Weekends.....	26
4.4.2.	Earn and return .....	27
4.4.3.	Community Recycling Centres (CRC) .....	27
4.5.	Key contractors .....	28
4.5.1.	Valmar Support Services.....	28
4.5.2.	Bellette’s Bulk Bins.....	28
4.5.3.	Elliott’s .....	28
4.5.4.	Australian Native Landscapes.....	28
5.	WHERE DO WE WANT TO BE?.....	29
5.1.	Vision.....	29
5.2.	SMART Goals.....	29
5.3.	Theme 1: Delivery of waste education and behavioural change .....	31
5.4.	Theme 2: Maximise resource recovery.....	32
5.5.	Theme 3: Innovation and circularity .....	33
5.6.	Theme 4: Data capture & intelligent decision making.....	34
5.7.	Theme 5: Service and infrastructure harmonisation and upgrade .....	35
6.	HOW DO WE GET THERE?.....	36
7.	MEASURING PROGRESS .....	40

Table 1: Strategy summary with themes and targets.....	6
Table 2: Summary of legislation, policies, strategies and guidelines in relation to the management of waste.....	12
Table 3: United Nations Sustainable Development Goals in relation to waste management. ....	13
Table 4: Summary of the National Waste Policy 2018.....	14
Table 5: Key result areas and targets of the EPA NSW WARR strategy 2014-2021. ....	16
Table 6: Theme and strategies outlined in the REROC Regional Waste Management and Resource Recovery Strategy 2014-2021. ....	18
Table 7: Themes and strategies outlines in the Snowy Valleys Community Strategic Plan 2028. ....	19
Table 8: Summary of existing total waste generation data (not comprehensive). ....	21
Table 9: Landfilling estimates for SVC. ....	22
Table 10: Recycling processed at Valmar Recycling Facility January – December 2018 and through REROC steel collections.....	23
Table 11: Number and proportion of serviced and non-serviced tenements.....	24
Table 12: SMART goal for this strategy, reliant on the establishment of a data baseline study.....	30
Table 13: Targets for waste education and behavioural change. ....	31
Table 14: Targets for maximisation of resource recovery. ....	32
Table 15: Targets and actions for innovation and circularity.....	33
Table 16: Targets and actions for data capture and intelligent decision making. ....	34
Table 17: Targets and actions for service and infrastructure harmonisation and upgrade/ ....	35
Table 18: Actions for each theme with associated implementation timeframes. ....	36
Table 19: Themes and performance indicators measuring progress off actions.....	40
Figure 1: Circular economy as applicable to waste (National Waste Policy 2018). ....	10
Figure 2: The waste hierarchy (NSW EPA WARR 2014-2021).....	11
Figure 3: Map of waste transfer stations and landfills in the council. ....	25
Figure 4: SMART goals illustrated.....	29

## 1. INTRODUCTION

The Snowy Valleys Council recognises that zero waste to landfill is the future goal that will create a resilient community where resources are processed rather than waste disposed.

The Environment Protection Act 1970 defines waste as a “*matter which is discarded in a volume, consistency or manner as to cause an alteration to the environment*”. Degradation of the biophysical environment is long term economic loss. SVC does not have a landfill for municipal waste and the transport and disposal costs are driving diversion options to be not just environmentally superior but financially wise.

This strategy establishes that business as usual is no longer viable financially, socially, technologically, environmentally or regulatory.

The council’s waste data is lacking, the recovery rates are below state requirements and sites are underachieving and faced with environmental issues. Current consumption of resources is unsustainable and the demand to change our lifestyles to become circular is as relevant in the Snowy Valleys as it is in Sydney. Further, standards need to be raised in order for this region to remain an attractive place to live, to encourage an increasing population, to maintain the regions tourism industry and to create a safe and clean environment for the community.

What the council has, and thus can build on, is a strong network of recycling centres and transfer stations managed by thorough operational staff and used with respect and appreciation by the community. The council also has a two-bin kerbside service that provides individual community members with a convenient way to recycle. A MoU between council and the not-for-profit disability support service provider, Valmar Support Services (VSS) has ensured that recycling of material collected at the kerbside and through the recycling centres has remained of high quality and thus never faced problems around the Chinese Sword Policy ban on imported contaminated material. Finally, the council’s regional collaboration has enabled successful metal, oil, e-waste and CRC product recycling to be sustained.

This strategy will align the council with the goals of the NSW EPA WARR and Circular Economy Policy as well as the National Waste Policy 2018.

## 2. PRINCIPLES

### 2.1. Circularity

“A circular economy values resources by keeping products and materials in use for as long as possible. Maximising the use and value of resources brings major economic, social and environmental benefits. It contributes to innovation, growth and job creation, while reducing our impact on the environment” – NSW Circular Economy Policy Statement 2019

The circular economy has been introduced as a concept in the waste industry in recognition that most waste is, or could be designed to be, reused or recycled rather than simply used and disposed of. The National Waste Policy 2018 has been designed to promote and move waste management to a circular industry. It ties in with the European Commission’s Circular Economy Action Plan and sets common targets for waste reduction which include a guideline stating that a maximum of 10% of municipal waste should be disposed of at landfill in 2030.



Figure 1: Circular economy as applicable to waste (National Waste Policy 2018).

## 2.2. Waste hierarchy

Whilst working to achieve zero waste to landfill, the waste hierarchy outlines the process that each material or object should be considered in. The targets and actions in this strategy were developed to be aligned with this hierarchy. Whilst leading by example and advocating for change is embedded in the council's role, much of the higher-level actions (avoid, reduce, reuse) lies in the responsibility of the individual.



Figure 2: The waste hierarchy (NSW EPA WARR 2014-2021).

## 2.3. Pricing principles

### 1. True cost of landfill

Landfilling is currently being done at a significant cost and it is likely that the price will increase by the choice of the private operator, by the waste levy being applied and/or that lack of landfill space will push the price up either by competition or transport.

### 2. Differential pricing

To discourage landfilling, recycling disposal options should be less expensive. Currently, recycling is free to customers at all recycling centres and transfer stations.

### 3. Sustainable development

Sustainable development defines a community that meets the need of the present without compromising the future generation's ability to do the same. This guides the actions proposed in this strategy. Most of what is asked of the community are changes in behaviour, not a cost increase and changes achieved does not avoid compromising future generations but rather seeks to establish a better and flourishing community for the future generations to thrive in.

## 3. RELEVANT POLICY AND LEGISLATION

A key driver for the development of the SVC Zero Waste Strategy is to align practices with national, state and regional policy. This section summarises the key aspects of relevant policies.

There are a number of legislative requirements and policies relating to waste management briefly outlined in Table 2.

Table 2: Summary of legislation, policies, strategies and guidelines in relation to the management of waste.

Legislation	Policy and Strategy	Guidelines
Environmental Planning and Assessment (EP&A) Act 1979	Draft Waste Avoidance and Resource Recovery (WARR) Strategy 2013-2021	Environmental Guidelines: Solid Waste Landfills, 1996
Protection of Environment Operations (POEO) Act 1997	Extended Producer Responsibility Priority Statement 2010	Environmental Guidelines Use and Disposal of Biosolid products, 2000
Waste Avoidance and Resource Recovery (WARR) Act 2001	Waste Reduction and Purchasing Policy	Environmental Guidelines: Composting and Related organics Processing Facilities, 2004
Protection of the Environment Operations (Waste) Regulation 2005	Waste Less Recycle More Initiative 2013	Good Practice Performance Measures for Kerbside Recycling Programs, 2004
Protection of Environment Operations (Waste) Amendment (Residue Wastes) Regulation 2005	NSW Illegal Dumping Strategy 2013-15	Reducing Contamination of Dry Recyclables and Garden Organics at Kerbside, 2007
	NSW Energy from Waste Policy Statement 2014	Crackdown on Illegal Dumping: Handbook for Local Government, 2007
		Guidelines for Conducting Household Kerbside Residual Waste, Recycling and Garden Organics Audits in NSW Local Government Areas, 2008
		Waste Classification Guidelines, 2009
		Preferred Resource Recovery Practices by Local Councils Best Bin Systems, 2012

### 3.1. IPCC Waste Management Emissions & UN Sustainable Development Goals 2005

The United Nations (UN) Sustainable Development Goals (SG) outlines how the governing bodies throughout the world can approach the development of human settlements and lifestyles to improve poverty, inequality, climate, environmental degradation, prosperity and peace and justice. The UN SG’s acknowledges the impact waste management has on climate change through post-consumer disposal greenhouse gas emissions generation. Specifically, it addresses the variable emissions generated from different types of processing such as landfilling (very high), incineration (very low) or composting (medium)<sup>1</sup>.

*Table 3: United Nations Sustainable Development Goals in relation to waste management.*

**UN SD 11 “Make cities and human settlements inclusive, safe, resilient and sustainable”** recognises the need to reduce cities impact on the environment especially through sound air quality and waste management.

**SG 12 “Ensure sustainable consumption and production patterns”** is of particular relevance to waste management and highlights the need to address food waste and chemical waste as well as the importance of waste reduction through prevention, reduction, recycling and reuse. It further encourages public procurement responsibilities and drives public awareness of sustainable development and lifestyles to all people.

**The UN SD 13 “Take urgent action to combat climate change and its impacts”** recognises the need for integration of climate change measures at all levels of policies, strategies and planning.

**UN SG 14 “ Conserve and sustainably use the oceans, seas and marine resources for sustainable development”** specifically addresses the need to eliminate plastic pollution in oceans through reduction of plastic use.

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<sup>1</sup> Bogner, J., M. Abdelrafie Ahmed, C. Diaz, A. Faaij, Q. Gao, S. Hashimoto, K. Mareckova, R. Pipatti, T. Zhang, Waste Management, In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

### 3.2. National Waste Policy 2018

The previous National Waste Policy 2009 focused on waste avoidance and increased recovery essentially aiming to lower landfill use. This strategy puts an emphasis on growing the Australian waste and recycling processing market, design and public procurement to embrace a circular economy. Table 4 outlines the key principles and strategies.

Table 4: Summary of the National Waste Policy 2018.

Principle	Strategy
Avoidance	<ol style="list-style-type: none"> <li><b>1. Waste avoidance:</b> Deliver coordinated actions that help the community and businesses avoid and minimise waste, through better design, reuse, repair, and sharing of products and services.</li> <li><b>2. Design:</b> Design systems and products to avoid waste, conserve resources and maximise the value of all materials used at every stage of a product’s life.</li> <li><b>3. Knowledge sharing, education and behaviour change:</b> Implement coordinated knowledge sharing and education initiatives, focused on the waste hierarchy and the circular economy, that address the needs of governments, businesses and individuals, and encourages the redesign, reuse, repair, resource recovery, recycling and reprocessing of products.</li> </ol>
Improve resource recovery	<ol style="list-style-type: none"> <li><b>4. Product stewardship:</b> Develop and implement partnerships across government and business to ensure ownership and responsibility for action to minimise the negative impacts from products, ensure the minimisation of waste and maximise reuse, repair and recycling of products and materials throughout their life cycle.</li> <li><b>5. A common approach:</b> Implement a common approach towards waste policy and regulation, particularly in relation to national opportunities to support the developments of markets for recycling.</li> <li><b>6. Improving access:</b> Identify and improve regional, remote and Indigenous communities’ ability to access, influence and participate in a circular economy.</li> <li><b>7. Increase industry capacity:</b> Identify and address opportunities across municipal solid waste, commercial and industrial waste, and construction and demolition waste streams for improved collection, recycling and energy recovery, to deliver ongoing improvements in diversion from landfill, improved quality of recycled content and use of the waste hierarchy.</li> </ol>
Increase use of recycled materials and build demand and markets for recycled products	<ol style="list-style-type: none"> <li><b>8. Sustainable procurement by governments:</b> All Australian governments consider environmental issues in their approach to goods and infrastructure procurement and promote demand for recycled materials and products containing recycled content.</li> <li><b>9. Sustainable procurement by business and individuals:</b> Businesses and individuals in Australia take environmental issues into account when purchasing or manufacturing goods and services and promote</li> </ol>

	domestic demand for recycled materials and products containing recycled content.
<b>Better manage material flow to benefit human health, the environment and the economy</b>	<p>10. <b>Plastics and packaging:</b> Reduce the impacts of plastic and packaging on the environment and oceans, reduce plastic pollution, and maximises benefit to the economy and society.</p> <p>11. <b>Sound management of chemicals and hazardous waste:</b> Manage and regulate chemicals and waste throughout their life cycle to minimise environmental and human health impacts and meet Australia’s national and international obligations.</p> <p>12. <b>Reduce organic waste:</b> Reduce organic waste, including garden and food waste, by avoiding their generation and supporting diversion away from landfill into soils and other uses, supported by appropriate infrastructure.</p>
<b>Improve information to support innovation, guide investment and enable informed consumer decisions</b>	<p>13. <b>Data and reporting:</b> Continue to support consumers and manufacturers to make more informed decisions by improving national data and reporting on material flows, waste and recycling, including economic aspects and reporting indices.</p> <p>14. <b>Market development and research:</b> All Australian governments and businesses generate and report information to support creating and maintaining markets for recycled materials, both domestically and internationally.</p>

### 3.3. NSW Waste Avoidance and Resource Recovery Strategy 2014–21

The New South Wales State Waste Avoidance and Resource Recovery (WARR) Strategy sets the following objectives and targets for 2021–22. A new strategy is anticipated at the end of 2019.

Table 5: Key result areas and targets of the EPA NSW WARR strategy 2014-2021.

Key Result Area	Target
1. Avoid and reduce waste generation	By 2021-22 reduce the rate of waste generation per capita
2. Increase recycling	By 2021-22 increase recycling rates for: - MSW from 52% in (2010-11) to 70% - C&I from 57% (in 2010-11) to 70% - C&D from 75% (in 2010-11) to 80%
3. Divert more waste from landfill	By 2021-22 increase waste diverted from landfill from 63% to 75%
4. Manage problem waste better	By 2021-22 establish or upgrade 86 drop off facilities or services for managing household problem waste statewide
5. Reduce litter	By 2016-17 reduce the number of litter items by 40% compared to 2011-12 levels and then continue to reduce litter items to 2021-22
6. Reduce illegal dumping	Implement the NSW Illegal Dumping Strategy 2013-15. By 2016-17 establish baseline data to allow for setting targets

The WARR strategy also sets the direction for other related programs, policies and plans that work to minimise the impact of waste on the environment and human health, including:

- Education to encourage behaviour change
- Economic mechanisms such as the waste levy that encourage resource recovery over landfill disposal
- Enforcement of the waste regulations
- Incentives to encourage investment, innovation and improvement in environmental practices.

#### 3.3.1. Waste Less Recycle More funding

The Waste Less Recycle More funding scheme was set out to change behaviours and upgrade infrastructure to reduce waste to landfill and improve environmental practices. Although not all funding streams are open, it is likely that similar initiatives will be renewed when the current 2017-2021 rounds cease. Prior to 2021, and of relevance to SVC, is that the organics infrastructure fund final round for infrastructure and collections and development of organic processing facilities is open July-August 2019.

- Local government waste and resource recovery – \$70 million including:
  - \$5 million for landfill consolidation and environmental improvements
  - \$9.5 million education campaign and support

- Illegal dumping prevention and waste enforcement – \$65 million
- Litter prevention and enforcement – \$30 million
- Household problem wastes – \$57 million
- Waste and recycling infrastructure – \$48 million including:
  - \$0.5 million - Weighbridges
  - \$14.5 million - Audits, education and support programs
- Organics infrastructure – \$35.5 million
  - \$14 million - Organics infrastructure
  - \$7 million - Food waste and avoidance grants and program
  - \$10 million - Local government organics collection grants
- Business recycling – \$22.5 million
- Recycling innovation – \$5 million
- Heads of Asbestos Coordination Authorities - \$4 million

### 3.4. REROC Regional Waste Management & Resource Recovery Strategy 2014-2021

The regional group of REROC’s strategy has six key themes. These themes set out directions and opportunities for regional collaboration. There aren’t any measurable goals or targets set in this strategy.

*Table 6: Theme and strategies outlined in the REROC Regional Waste Management and Resource Recovery Strategy 2014-2021.*

Theme	Strategy
<b>1. Making it easier for households to separate, recover and reuse their waste</b>	1.1. Yours2Take becomes the first stop for households wanting to dispose of waste that has a reuse value 1.2. Increase the opportunities for households to recycle organic material 1.3. Increase levels of recyclables collected from households in the REROC region
<b>2. Making it easier for businesses to separate, recover and reuse waste</b>	2.1. Increase in usage by businesses of the Yours2Take website 2.2. Encourage the commercial and industrial sector to more effectively manage waste and resource recovery.
<b>3. Reducing or removing problem wastes to improve resource recovery and produce environmentally safe recyclable products</b>	3.1. Implement regional solutions for e-waste 3.2. Facilitate and co-ordinate regional collections of problem wastes. 3.3. Conduct household hazardous waste collections every second year 3.4. Promote the use of the safe sharps site 3.5. Monitor developments for the disposal of other problem wastes
<b>4. Facilitating investment in waste infrastructure</b>	4.1. Explore the opportunity to establish regional collection and processing facilities including regional landfills 4.2. Promote investment in regional and rural infrastructure by all tiers of government and private enterprise 4.3. Work with councils to implement best practice approaches to the operation of waste facilities
<b>5. Reducing litter and combating illegal dumping</b>	5.1. Develop and conduct regional litter campaigns 5.2. Develop and implement regional responses to illegal dumping
<b>6. Education for sustainability</b>	6.1. Promote sustainable living options to the community 6.2. Increase councillor and council staff awareness and participation in sustainability initiatives

### 3.5. Snowy Valleys Community Strategic Plan 2028

The Snowy Valleys Community Strategic Plan 2028 is the document that attests to the engagement and involvement of the community and their desired direction of the newly established council area. Themes in the plan include a strong sense of pride in their rural lifestyle and the associated natural beauty, peace and quiet and small towns. Directions include a desire for better connection through road upgrades and revitalisation actions such as beautification of townships and better services to attract both tourism and a younger generation. Themes 3 and 5 both include waste service improvements.

Theme 3, Our Natural Environment, outlines five strategies, of which four of which are directly relevant to the management of waste. The SVC has recognised the importance of the natural environment to their recreation, tourism and sense of identity. In turn these strategies outline that best practice management of waste through essentially reducing landfill which is key for maintaining this natural environment. Further in theme 5, the community expressed their desires for a reliable waste and sewage service both for locals and tourists during peak season.

*Table 7: Themes and strategies outlines in the Snowy Valleys Community Strategic Plan 2028.*

Theme	Strategy
<b>3. Our natural environment</b>	3.1 Demonstrate leadership in environmental sustainability by reducing council’s carbon footprint and supporting the use of clean energy 3.2 Promote programs and initiatives which encourage more sustainable living 3.3 We sustainably manage waste through a commitment to resource recovery and best practice waste Management 3.4 Protect and manage local air quality, waterways, rivers and streams 3.5 Partner and support other agencies to protect local fauna and biodiversity ecosystems
<b>5. Our infrastructure</b>	5.3 Provide a program to deliver and improve public amenities and infrastructure which meets an acceptable community standard

## 4. WHERE ARE WE NOW

### 4.1. Council profile

SVC was formed in 2016 from the amalgamation of Tumut Shire and Tumbarumba Shire. Townships include Adelong, Batlow, Brungle, Jingellic, Khancoban, Rosewood, Talbingo and Tooma with Tumbarumba and Tumut being the larger centres of previous councils.

The population was recorded at 14,395 in the 2016 census data with a predicted small but steady population increase. Aboriginal and Torres Strait Islander people represent 4.4% of the population whilst the ancestry of others are dominantly Australian, English, Irish, Scottish and German.

The population is ageing but 3,762 families live here. 58.3% have full time employment and 29.8% have part-time employment. Main employment sectors include agriculture (5.7%) which is mostly beef cattle, log sawmills (3.4%), retail which is mostly supermarkets (3.1%), manufacturing of paperboard (2.8%) and local government administration (2.8%).



Picture 1: Snowy Valleys Council landscape (credit John Stanfield).

### 4.2. Waste and recycling generation

According to the WARR Strategy, recovered material includes metals, textiles, rubber, paper/cardboard, glass, plastics and compost.

SVC lacks data for difference sectors – . MSW, C&I and C&D. What exists is data for the amount of waste landfilled (including MSW and self-haul) and total material recycled at the council operated facility (including kerbside, transfer station drop off, some agricultural collections and some C&I bi-products).

With many factors are unknown, a council-wide recovery rate cannot be established. However, the recovery rate is likely to be low. In the table below, known amounts of landfilled and recovered material are outlined showing that more than 70% is landfilled. With 20% of households and most of commercial enterprises serviced by a private collector without any recycling, the landfilling number

inclusive of C&D and C&I is likely much higher. Counteracting this is the lacking data for green waste and CRC streams which would add to the recovery proportion.

Table 8: Summary of existing total waste generation data (not comprehensive).

Material	Tonnes/annum	Proportion
Waste landfilled	3,927.00	72.3%
Comingled recycling	772.00	14.2%
Other recovered at Valmar	449.39	8.3%
Container deposit scheme	45	0.8%
Metal recycling	238.02	4.4%
Total waste	<b>5,431.41</b>	<b>100%</b>

#### 4.2.1. Landfilling

At this point in time there is no data collecting program or a weighbridge at any of the council waste transfer stations. Numbers for SVC operated landfills are based on volumetric estimations. Furthermore, there has not been any internal reporting in 2017-2018 and the figures in

Table 9 include estimations for different years in an attempt to gain an annual figure. Landfilling at Batlow and Adelong has ceased at the start of 2019 and that waste would not be processed through Tumut transfer station.

Table 9 includes all kerbside waste and waste disposed of at council managed sites. It does not, however, include any regional or commercial collection managed by Bellette’s Bulk Bins.



Picture 2: Khancoban Landfill.

Table 9: Landfilling estimates for SVC.

Area	Tonnes
Landfilled to Bald Hill	2017-2018
Tumut	2,326
Tumbarumba	1,080
Landfilled within SVC	2016-2017
Khancoban	71
Batlow	450
<b>Estimated annual total MSW Waste generation</b>	<b>3,927</b>

#### 4.2.1. Recycling

All recycling received at SVC waste transfer stations and through kerbside collection is processed at the Valmar Recycling Facility at Tumut. Below is a summary of figures from January to December of 2018. It is estimated that 75% of co-mingled material is received from kerbsides and 25% from waste transfer stations. All co-mingled material is collected in a truck and thus cannot be averaged out to per household generation.



Picture 3: Recycling belt at Tumut Material Recycling Facility.



Picture 4: Baled recycled material at Tumut material recycling facility.

Table 10: Recycling processed at Valmar Recycling Facility January – December 2018 and through REROC steel collections.

Recycling Processed by Valmar	Tonnes/annum Jan-Dec 2018
PET	8
Paper/cardboard	650
HDPE	42
Green Pet (bottles)	3
Aluminium	3
Steel cans	32
Mix Plastic	34
<b>Co-mingled total</b>	<b>772</b>
Film (Coles)	2.25
OP Shop	20
Pet chip	9.12
Batteries	48
Yard steel	120
LPDE (black/white film)	8
Cooper wire/motors	4
<b>Other recoverable</b>	<b>211.37</b>
<b>Containers from the Deposit Scheme</b>	<b>45</b>
<b>Metals recovery from Tumut &amp; Tumbarumba</b>	<b>238.02</b>
<b>Total diverted material</b>	<b>1266.39</b>

### 4.3. Existing Waste Services

#### 4.3.1. Rate waste charges

The waste charges from the two previous councils have remained different up until now. In April 2019, council decided to harmonise the kerbside waste rate charges at \$448 per annum per household. This is the first raise in three years and is comparatively low in the region. All registered tenements are also charged a waste access fee that goes towards the running of transfer stations. This fee of \$53 per annum per household was approved in April 2019. The increase has been budgeted for allocation for infrastructure and service improvement actions outlined in this strategy. This will achieve council-wide waste reduction, significant recycling service capacity and capability as well as a long-term plan for resilient management of residual waste.

Compared to neighbouring councils, Cooma’s rates are \$495 per annum per household and Cootamundra-Gundagai is up to \$419 per annum per household for a two bin service only.

#### 4.3.2. Kerbside collection

Residents receive a two bin kerbside service which includes a weekly 140 litre residual bin and a fortnightly 240 litre recycling bin service. Many rural properties are serviced independently by Bellette’s who uses using small skip bins, but these properties do not have a recycling option.

Table 11: Number and proportion of services and non-serviced tenements.

SVC combined	Number	%
Total serviced bins	6,069	80.67%
Total non-serviced tenements	1,454	19.33%
Total registered tenements	7,523	100.00%

#### 4.3.3. Waste Depots

There are six waste transfer stations open to the public. They all offer disposal points for general waste, co-mingled recycling, green waste, oils, scrap metal and drumMUSTER. Adelong, Talbingo, Batlow and Khancoban are basic operations manned by one staff member a few times a week. Tumut and Tumbarumba sites have Community Recycling Centres and push pit set ups for the collection and loading of the respective regions kerbside waste. The Tumut site is also where the whole councils recycling is processed and where eligible containers can be returned under the Earn and Return scheme.

Whilst all sites are tidy and operated by an engaged and competent team, the current service offered could be improved and more services could be offered. Most sites need an infrastructure upgrade and some sites have small to major operational health and safety issues. This ranges from inadequate bollards on ramps to unsealed roads and more concerningly to areas where industrial processes and traffic are mixed with the public use. The bin infrastructure is rented from Bellette’s and the skips are small and costly to transport.

Batlow, Adelong and Khancoban have open unlicensed landfilling cells which are not receiving any municipal waste as of 2019. Further, there are old landfill sites in Tumut and Rosewood. All of these landfills need active management, monitoring and to varying degree, capping and revegetation plans.

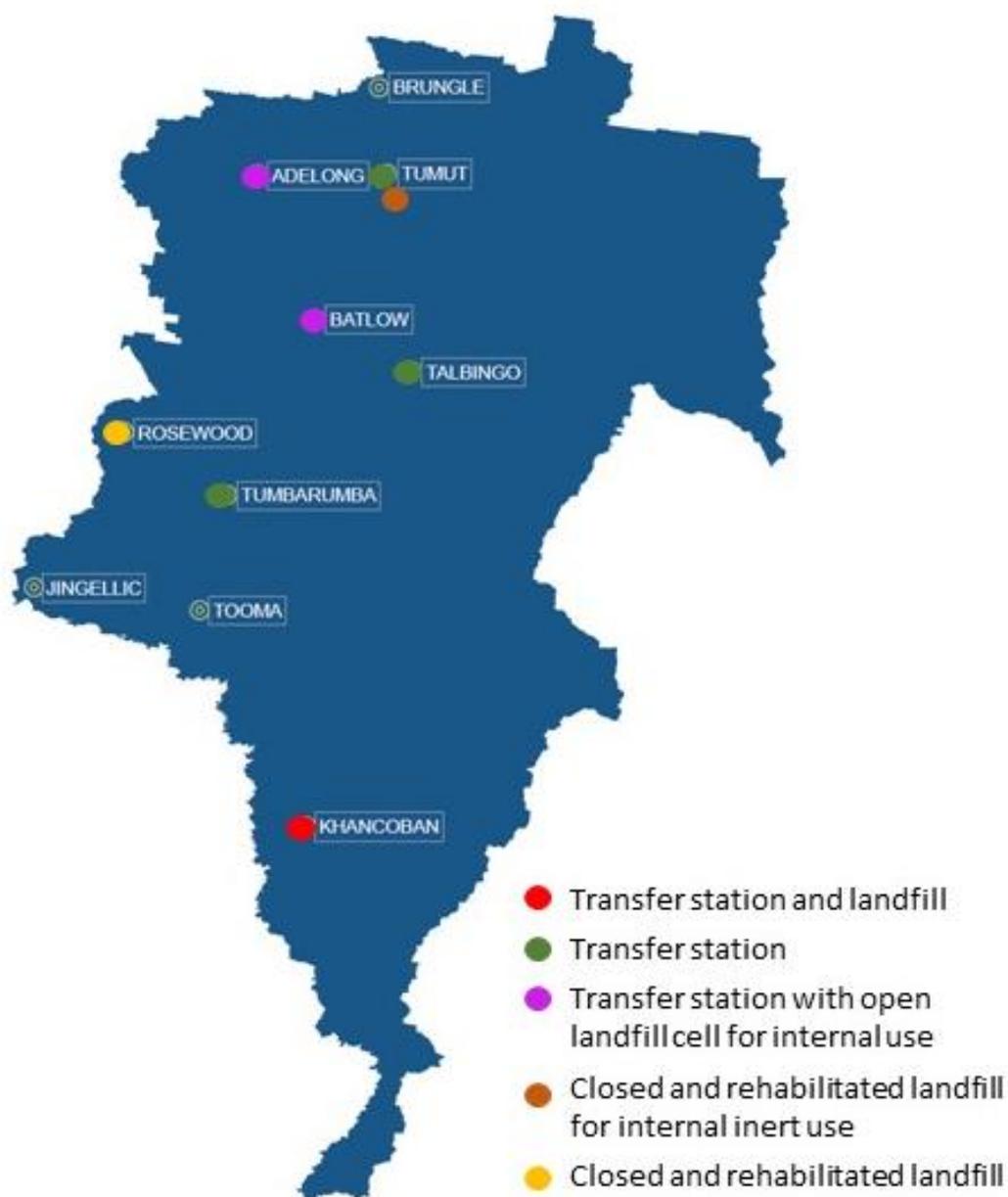


Figure 3: Map of waste transfer stations and landfills in the council.

#### 4.3.4. Regional Contracts

SVC has regional contracts for the collection of the following waste:

- General waste – Tumbarumba Shire was an original member in the South West Regional Waste Management Group which consists of eight councils. This group are partners in the management of the Bald Hill landfill in Jugiong and part owners in a fleet of compactor trailers that transport waste to the facility. All waste received at Tumbarumba site is transported and disposed of at Bald Hill at a combined cost.
- *Scrap Metal* – RERO has been letting regional contracts for the collection of scrap metal for 16 years. During that time, approximately 20,000 tonnes of metal has been collected. The real value in the regional approach lies in the capacity of the arrangement to ensure that even the smallest council in the region has its metal collected and receives an income stream for it.

- *Chemical CleanOut* – Every second year REROC organises a regional collection of household hazardous waste. A collection is organised in each local government area in the REROC region usually in May or June.
- *Community Recycling Centres* - REROC has been instrumental in introducing CRC services in the region. It is anticipated that this will have some impact on the amount of waste that is collected through the Chemical CleanOut in the future. However, SVC remains committed to providing the collection service.
- *E-Waste* – REROC has entered into a contract arrangement with MRI-PSO E-cycle Solutions for the free collection of e-waste in each of the REROC member LGAs. The collections were introduced in June 2013 and have continued without interruption ever since. On average, 10-15 tonnes of waste are collected each month. Under the contractual arrangements with MRI-PSO, REROC arranges for the transport of the waste and MRI-PSO contributes to the cost. All e-waste is sent to Kurrajong Recycling in Wagga Wagga where it is processed.
- *Waste oil* - REROC worked with the Federal Government to help fund the double bunded steel tank facilities. Some of these are in small buildings and others in oversized ground level cabinets. Oil is emptied into the holding tanks and the emptied plastic and steel containers are integrated into the recycling system on site. SVC does not charge residents to use these facilities and the waste oil is collected by Australian Waste Oils of Canberra at no cost to council.

#### 4.4. Special collections

##### 4.4.1. Seasonal Waste Weekends

The SVC hosts waste weekends at all six transfer stations four times per year. This provides all residents with the opportunity to dispose of larger household items such as mattresses, refrigerators and other larger white goods and furniture free of charge. Extra bins are brought in and transferred to Tumut by Bellette's where extra loads are scheduled for Elliott's to dispose of at the Bald Hill landfill. Extra staff hours, infrastructure and transport accrue a significant cost to the council.

These events are extremely popular in the community, however, internally some issues have been reported around the practicalities of the events and the safety of public and staff. Further, there has not been any recovery of material at these events, but staff have observed great potential for both reuse opportunities and recycling diversion. These issues arise from high traffic levels over a short period with inadequate staffing. This results in a rushed disposal process and the inability to recover material.



Picture 5: Children in the middle of traffic flow at a waste weekend at Tumut.

#### 4.4.2. Earn and return

At the Tumut Waste and Recycling Centre here is an Earn and Return point where residents can exchange eligible containers for 10c per item. This has been extremely successful and is currently processing more material than anticipated. It has been reported that many users travel from neighbouring councils. The location of this service within the Tumut site needs to be reviewed as it has poor traffic management and operational flow.



Picture 6: The CDS singulator technology with identifiable sign out the front, Tumut Waste & Recycling Centre.

#### 4.4.3. Community Recycling Centres (CRC)

The SVC has CRCs located at the Tumut and Tumbarumba sites. These facilities accept a range of problematic waste including gas cylinders, fire extinguishers, single-use batteries, vehicle batteries, acrylic and oil-based paints, fluorescent tubes and bulbs, cooking oils, motor oils and smoke detectors.

Staff at the sites report on product fill rates through a provided pad and the sites are emptied by Toxfree. Council does not contribute towards product disposal costs. Valmar Support Services, who operate the Tumut site, have a tablet that links to the CRC program that permits ongoing product volume monitoring and the products are collected as required.



Picture 7: CRC at Tumut Waste & Recycling centre.

#### 4.5. Key contractors

##### 4.5.1. *Valmar Support Services*

In 2010, council (then Tumut Shire Council) entered a 10-year MoU with Valmar Support Services (VSS) to manage both waste transfer facilities and the recycling centre. The aim was to provide long-term meaningful employment opportunities for local people with a disability.

The MoU was a profit-sharing partnership agreement that results in VSS operating an open book accounting system with full financial disclosure to council at the end of each financial year. Unfortunately, the cost of the service provision has exceeded the income generated for the last eight years and VSS have been subsidising the operation of the site somewhere between \$40,000-\$50,000 per annum for most of that time. This loss has always been considered acceptable to VSS as they have a long-term arrangement providing stable employment for people with a disability. The economics of the National Disability Insurance Scheme (NDIS) have not yet been considered and could result in either positive or negative financial impacts.

The Container Deposit Scheme management contract has provided a reliable income for both council and VSS resulting in a better financial management of operations.

##### 4.5.2. *Bellette's Bulk Bins*

Bellette's Bulk Bins hire bulk skip bins both to private people and councils and are responsible for the servicing of them. Recently, they have suggested that that are likely to maintain operational for at least 10 more years.

Bellette's have a fleet of trucks and a site adjacent to the Tumut Waste & Recycling Centre where they receive, process and landfill material at their privately operated inert landfill.

There is currently no data sharing agreement with Bellette's and no reporting on recovery rates.

##### 4.5.3. *Elliott's*

Elliott's is dominantly a landscape supply company who offers services of haulage. They are contracted to transport the waste from Tumut to the Bald Hill landfill in Jugiong.

##### 4.5.4. *Australian Native Landscapes*

Australian Native Landscape (ANL) has a regional depot on the adjacent site to the north of the Tumut Waste & Recycling Centre. Residents in the area with green waste are directed to ANL.

## 5. WHERE DO WE WANT TO BE?

### 5.1. Vision

Snowy Valleys Council is striving for zero waste to landfill and generates an innovative community where waste avoidance at home and in the workplace is driven and encouraged by a progressive council who leads by example in procurement policies and best practice transfer stations. The desire to create a sustainable and resilient place to live has made use of circular economic principles for materials which has generated new business and employment whilst saving cost for the council and its residents.



Picture 8: The Snowy Valleys landscape in the mist (credit John Stanfield).

### 5.2. SMART Goals



Figure 4: SMART goals illustrated.

SMART goal setting ensures that goals can be achieved by implementing the key principles: specific, measurable, achievable, relevant and time bound. The goals created for this strategy are realised on the establishment of a sound and comprehensive data baseline program to start measuring the change.

Table 12: SMART goal for this strategy, reliant on the establishment of a data baseline study.

GOAL		2025	2030	2050	
Reduce waste generation	Reduce per capita kerbside waste generation (kg/hh/week/service), from the 2020 baseline figures, for:	The kerbside residual bin, by:	50%	90%	100%
		The kerbside recycling bin, by:	10%	30%	40%
		The avoidable food content in the FOGO bin, by:	50%	90%	100%
Kerbside streams	Increase recycling rates, based on 2020 baselines, for:	Garden material from the residual bin, by:	99%	99%	100%
		Food material from the kerbside residual bin, by:	50%	80%	100%
		Co-mingled recycling from the residual bin, by:	50%	90%	100%
		Household bins with e-waste present in any kerbside bin, by:	50%	95%	100%
		Household bins with hazardous material present in any kerbside bin, by:	50%	80%	100%
		Textiles from any kerbside bin, by:	50%	80%	100%
Commercial and industrial (C&I) waste	Increase recycling rates, based on 2020 baselines, for:	Co-mingled recycling from the C&I stream, by:	50%	90%	100%
		Food material from the C&I streams, by:	50%	80%	100%
Construction and demolition (C&D) waste	Increase recycling rates, based on established baseline 2020-23, for:	C&D material, by:	50%	80%	100%

### 5.3. Theme 1: Delivery of waste education and behavioural change

**Objective:** Promote action in the upper level of the waste hierarchy: avoid, reduce and reuse, whilst creating an innate understanding of the value of resources in the community.

Table 13: Targets for waste education and behavioural change.

Section	Target
1.1	An education and engagement plan is created
1.2	The awareness of the importance of waste avoidance specifically addressing avoidable food waste and plastic packaging increases throughout the community
1.3	Education is provided to the community about the financial and environmental cost of landfill and the lifecycle of recycling streams
1.4	Inaccurate beliefs of recycling being landfilled are stopped and the strength of existing recycling processes is showcased
1.5	Council advocate for increase product stewardship programs through the National Waste Policy
1.6	Council remain regionally connected with either a JO or ROC
1.7	The role of waste education within council is strategically integrated into a role

Waste has been brought to the attention of many through TV programs, news stories around recycling crises and the environmentally aware consumer industry. This has a mixed result in the community, where some now believe that all recycling ends up in landfill whilst others believe they are saving the planet by using a biodegradable bag. However, this focus in the lower level of the hierarchy: recycling, recovery and appropriate disposal have skewed the focus needed for a vibrant recovery industry and a zero-waste future. What is clear is that parts of the industry and practices have a tainted past, that recycling is genuinely confusing and that our lifestyles had built in the single-use convenience. Waste is not a problem that needs to be solved and then forgotten but is, and always has been, a part of human civilisation. As the industry is rapidly changing and new concepts introduced, the continual information and engagement needs to be integrated into all aspects of a community in a similar way to health care or schooling.

#### 5.4. Theme 2: Maximise resource recovery

**Objective:** Stop resources going to landfill at an environmental and financial cost that can have an extended life through reuse and repair or a new value, generating employment, through recycling or reprocessing.

Table 14: Targets for maximisation of resource recovery.

Section	Target
2.1	Garden and unavoidable food waste from landfill is minimised and ultimately eliminated
2.2	Avoidable food waste from landfill is minimised both through avoidance and diversion
2.3	Co-mingled recyclables from landfills minimised and ultimately eliminated
2.4	Reuse and service economy is promoted and supported in the council
2.5	Council transfer station establishes procedures and areas to process and distribute C&D material
2.6	Illegal dumping and littering are strategically documented, discouraged and ultimately declines
2.7	Public place disposal point including streets, parks and event offer recycling and eventually organics recycling bins

The waste industry is changing rapidly in response to policy and regulation from state and national directive. Landfill levies, available grants, landfill reduction targets and community expectations are driving growth in the recovery sector to be financially viable. Many businesses have established in the region from specialised areas such as recycling tyres, mattresses or glass to large scale opportunities in food and garden organics diversion and compost generation. In this section, actions look to the increasing use of existing services and infrastructure to improve processing capacity and capability which will generate increased employment.

### 5.5. Theme 3: Innovation and circularity

**Objective:** Plan beyond recycling to create business opportunities for circular uses of materials and innovative waste processing that can bring employment into the council rather than outsourcing services.

Table 15: Targets and actions for innovation and circularity.

Section	Target
3.1	Council leads by example for market stimulation
3.2	Council leads the establishment of a circular economy for organic processing
3.3	Council promote the establishment of local reprocessing and manufacturing business using recycled content, C&D material and other waste streams
3.4	Seek an alternative to landfill for short-medium term end of life waste streams

SVC has some progressive development around FOGO processing, tyre/mattress recycling and the SVC home grown Valmar’s MRF. But there is more opportunity to bring business to SVC through partnerships and regional collaboration. This is a essential foundation to the concept of processing resources to generate business, employment and income rather than paying to dispose of waste

In regional areas, transportation is a significant cost. Furthermore, there is land and property available regionally at comparatively low prices to urban areas. Analysis would suggest that processing and value-adding within the region for on-sale to regional, urban or international markets is made viable by the comparative high disposal/transportation cost and low overheads.

Identified opportunities in this section include organics processing and C&D recovery for local application, specifically in relation to exiting agricultural land use and the construction phase of Snowy 2.0 but also ongoing maintenance of forestry and council roads.

It is also realistic to commence the conversation for a post-landfilling society and the use of incineration as a medium-term solution with carefully considered recycling policy. With Visy within SVC, who generates a significant amount of combustible waste that is currently transported across the nation for disposal, the skill set may be within reach. Rather than remaining dependent on a regional landfill or a future where transportation of residual waste is grossly increased, SVC could be a leader in the region.

## 5.6. Theme 4: Data capture & intelligent decision making

**Objective:** Know the full picture of current waste generation to target actions and funding and set measurable KPIs for implemented strategies.

Table 16: Targets and actions for data capture and intelligent decision making.

Section	Target
4.1	Waste generation accounting and reporting is established and maintained
4.2	A cross-sector, cross waste stream baseline data set is collected to enable the tracking of goals success and target resources for improvement
4.3	Review the Seasonal Waste Weekends program

Evidence based decision making and measurable change should be the foundation of any business. The council has largely absent data gathering systems therefore baselines and strategies for continual monitoring need to be established. Data will enable logistics and operations to be efficiently and continually updated, will ensure budgets are kept and will also be essential for grant applications and innovative business development.

## 5.7. Theme 5: Service and infrastructure harmonisation and upgrade

**Objective:** Optimise the use of existing recycling capabilities and increase processing capability and capacity at the most effective logistical manner.

Table 17: Targets and actions for service and infrastructure harmonisation and upgrade/

Section	Target
5.1	Create an infrastructure plan
5.2	Service provision is the same at all council operated transfer stations and the logistical servicing of the site is managed in-house at optimum efficiency
5.3	Asbestos disposal is addressed
5.4	Tumut Waste & Recycling Centre is upgraded to best practice management and the MRF provides improved processing capability and capacity
5.5	Council forms a waste division

Waste and recycling infrastructure are the practical application of resource recovery. The foundation of current infrastructure is strong, but operations and consistency has not been addressed strategically. The skip bins at transfer stations are small and unsuitable for their purpose as well as being privately managed at a significant cost to council. The MRF at Tumut is too basic to achieve a high recycling rate that reflects the management capabilities and aspirations. The service offering across the council transfer station is inconsistent and arguably inequitable. A budgeted infrastructure plan encompassing the action in this theme over a defined timeframe needs to be created.

## 6. HOW DO WE GET THERE?

The actions outlined under each of the themes have been developed to align SVC with state and national initiatives and processes. Further, it leans heavily on the input from councillors, council, community members and businesses who have been engaged through the process of developing this strategy.

Table 18: Actions for each theme with associated implementation timeframes.

Theme	Number	Action	Timeframe
Deliver waste education and advocate for behavioural change	1.A	Create a school education program with a continually updated kit	Short-Long
	1.B	Actively engage in the Love Food Hate Waste program including printed material and videos promoted from council	Short-Long
	1.C	Establish waste committees in Tumbarumba and Tumut	Short-Long
	1.D	Advocate for stories around avoidance, recycling and waste to be published in local press and radio	Short-Long
	1.E	Encourage tours and presentations of the waste and recovery centres including tip shop and recycling and waste process	Short-Long
	1.F	Redesign signs at the transfer stations to include messages of each stream's life cycle	Short
	1.G	Seek to establish a fellowship program for a key industry member to be supported to travel and learn from international examples for local applications	Medium-Long
	1.H	Investigate a planned delivery of academic support for undergraduates to train in the creative resource recovery industry	Medium-Long
	1.I	Promote existing organisations/initiatives such as Plastic Free July, No Waste in My Lunchbox, sustainable living programs	Short-Long
	1.J	Formalise the roles for a waste education officer within existing employees' responsibilities or budget to hire a new 0.5-0.8 full-time equivalent (FTE) role	Short-Medium
Maximise resource recovery	2.A	Deliver a food and garden organics diversion (FOGO) collection service to households and food generating businesses	Short-Long
	2.B	Deliver continued monitoring and education to minimise organic contamination and continually increase diversion	Short-Long
	2.C	Design, budget and continuously deliver a household recycling education program which informs incorrect behaviours, encourages good practices and warns poor practices	Short-Long
	2.D	Increase the number of kerbside serviced tenements	Short-Long
	2.E	Investigate appropriate locations for the bank of bins (BOB) kerbside services and e-swap bin program and provide clear information on council customer service outlets	Short-Medium

	2.F	Investigate the design and viability of an assisted bin collection program for residents with difficulties managing kerbside bins	Medium
	2.G	Develop clear and continuous communication about the recycling services in SVC including: services available at transfer stations, local drop-offs (soft plastics, second-hand shops) and the kerbside co-mingled service	Short-Long
	2.H	Plan and deliver public place recycling bins for permanent and temporary locations	Short-Long
	2.I	Upgrade the recycling infrastructure at all six transfer stations to correspond to the MRFs sorting capacities in accordance with the number five infrastructure theme	Short-Long
	2.J	Investigate how to logistically best provide silage, hay and fruit tree netting recycling services to farmers	Short-Medium
	2.K	Engage with the business community about the promotion of New South Wales Environment Protection Authority Business Waste Reduction Program	Medium-Long
	2.L	Ensure recycling collection services are available for all businesses and incentivise the use	Medium-Long
	2.M	Establish a tip shop and main transfer station and points for dropping off material at all council transfer stations	Medium-Long
	2.N	Promote and support sharing services such a tool libraries and repair cafes	Medium-Long
	2.O	Develop a plan to capture C&D waste and evaluate appropriate diversion methods and markets for distribution	Medium-Long
	2.P	Impose new information and policy around new development to include recovery options and sustainable practices	Medium-Long
	2.Q	Provide information and links to green star rated building practices	Medium-Long
	2.R	Promote the use of recovered C&D material to business and lead by example through council use	Medium-Long
	2.S	Design a campaign message that values SVC natural landscape and highlights the issues of litter and dumping	Medium-Long
	2.T	Work with state and region on a coherent message, monitoring and processes for offences	Medium-Long
	2.U	A litter and illegal dumping reporting register is implemented and maintained	Short-Long
	2.V	Work with other land managers (NP and Forestry) to address waste service needs and sharing of costs	Short-Long
Innovation and circularity	3.A	Create a public procurement policy to purchase local, reused, repurposed and recycled products	Medium-Long
	3.B	Establish a composting facility that processes SVC household and commercial food, garden and agricultural organics into resources that are sold within the community	Short-Long
	3.C	Conduct an analysis of business opportunities investigating existing waste streams, existing regional processors, national regional solutions applicable for mimicking and potential local operators	Medium-Long
	3.D	Seek assistance from state/regional groups to collaborate	Medium-

		and establish a local C&D sorting and processing facility	Long
	3.E	Commence a collaboration with the region through JO or ROC to analyse composition and quantity of waste streams from municipal and main industry and investigate the viability of a WtE plant and/or PEF	Medium-Long
	3.F	Investigate key industries interest in a local/regional solution such as WtE or PEF	Medium-Long
	3.G	Consider strict regulation and policy to ensure avoidance and recycling is prioritised over other disposal solutions	Medium-Long
Data capture and intelligent decision making	4.A	Conduct a baseline household waste and recycling audit with regular follow up audits (every 1-3 years)	Short-Long
	4.B	Conduct a transfer station audit of incoming contractor and self-haul waste	Short-Long
	4.C	Investigate all non-council disposal locations and seek to establish data sharing partnerships	Short-Long
	4.D	Conduct an audit of the MRF to identify issues, opportunities and recycling rate	Short-Long
	4.E	Implement a weighbridge at a central location for recording all council-managed waste	Short
	4.F	Redesign the logistical operations of waste and recycling collections to allow for accurate data recording	Short-Long
	4.G	Produce annual waste reports to track change	Short-Long
	4.H	Streamline litter and illegal dumping reporting for all land managers (council, NP, Forestry, others)	Short-Long
	4.I	Set quantifiable diversion, recovery and contamination targets for all waste stream over time	Short
	4.J	Conduct public surveying to gain qualitative insight into education programs and enable improvements to be targeted to an expressed need or issue	Short - Long
4.K	Investigate strategies for improved recycling and pricing structures that are accepted by the community	Short-Medium	
Service and infrastructure harmonisation and upgrade	5.A	All transfer stations offer services of co-mingled containers, cardboard, silage wrap, tyres, mattresses, CRC, drumMUSTER, green waste, oil, salvageable (tip shop) items, scrap metal and general waste	Short-Medium
	5.B	All transfer stations adapt best practice layouts where resource recovery is encouraged	Short-Medium
	5.C	Upgrade drumMUSTER cage infrastructure, disposal procedures and collection by contractor	Short
	5.D	Purchase council owned transfer station bins that cater to the size that optimises servicing	Short-Medium
	5.E	Purchase council owned truck to service the transfer station	Short-Medium
	5.F	Redesign the logistic servicing of the transfer station to optimise efficiency in correspondence to servicing demand	Short-Medium
	5.G	Purchase a polystyrene machine	Short-Medium
	5.H	At a minimum, inform residents of location and pricing of appropriate safe disposal of asbestos	Short
	5.I	Explore operating a disposal location for asbestos within	Short-

		council borders	Medium
	5.J	Train site and truck operators to identify asbestos and procedures for safe disposal	
	5.K	Redesign Tumut Waste & Recycling Centre to: - Achieve operational health and safety - Include a layout that corresponds to best practices for optimum resource recovery - Be the designated processor of recycling for the council - Include a weighbridge, tip shop and a potential education centre	Short-Long
	5.L	Evaluate Tumut Waste & Recycling Centre site for capacity to include a composting site and/or a C&D processing pad	Short-Medium

## 7. MEASURING PROGRESS

Whilst the key goals will be measured in quantifiable units outlined in section 5.2, there are many ways to track progress that considers actions and outcomes. By tracking performance using indicators, both quantitative and qualitative measures can be used.

Table 19: Themes and performance indicators measuring progress off actions.

Theme	Performance Indicators
Deliver waste education and advocate for behavioural change	A waste education and engagement plan is developed
	Number of visits to school per annum
	Number of social media posts per annum where the council's waste strategies were discussed
	Number of articles per radio programs where the council's waste strategies were discussed
	Number of tours/presentations per annum run at the transfer station
	Signs for all services offered are updated and coherent at all council-managed waste facilities
	Signs include messages of next steps for processing and manufacturing
	Official procedures for fellowship/academic assistance administered by council
	Number of people receiving waste-related academic education
	Waste education is formalised in a council contract
Maximise resource recovery	Number of tenements with a FOGO service provided
	Education material contains information about amounts of organic material collected and amounts and types of contamination
	Number of bins assessed per annum
	Number of kerbside serviced tenements
	Number of bins and locations with BOB
	Amount of silage and hay and fruit tree netting collected (tonnes per annum)
	Number of public recycling/organic bins installed
	Number of commercial businesses serviced by council recycling collections
	Number of tip shops established
	Tip shop turnover (\$ per annum)
	Amount of material sold through tip shop (number of sales/tonnes)
	Number of sharing business/service in the SVC
	Establishment of a sound quantified amount of C&D waste (tonnes) disposed of in the council both at council-managed facilities and through Bellette's
	Markets for recovered C&D material is known and promoted
	Amount of recovered material used in council operations (tonnes/annum)
	Number of green star rated buildings in the council area
Number of litter and illegal dumping events per annum	
An agreement with NSW National Parks is reached	
Innovation and circularity	Council public procurement policy includes targets for local, reused, recycled and repurposed products
	Amount of organic material going to landfill (tonnes per annum)
	Amount of organic material processed to compost (tonnes per annum)
	C&D processing exists in the council
	Amount of C&D material sorted and sold (tonnes per annum)
	WtE is discussed with JO/ROC and/or key businesses

Data capture and intelligent decision making	Baseline audit conducted
	Number of follow up audits conducted
	Transfer station audit conducted
	MRF audit conducted
	Regular quantifiable (tonnes and %) data is collected from the MRF process for each waste stream and contamination
	Weighbridge is installed
	Logistical operation is planned so all data can be quantifiable recorded
	A waste data reporting system is implemented
	A set of SMART goals are set for kerbside, C&I and C&D waste, recycling and organic streams
	A regular survey (conducted every 1-3 years) is designed to track public perception of council waste strategies
Service and infrastructure harmonisation and upgrade	A waste infrastructure budget and plan is developed with costed and engineered options for redesign of Tumut Waste & Recycling Centre
	What type and number of services are offered at each site
	Amount of material diverted through each stream (tonnes per annum)