

WASTE STRATEGY: TRANSFER STATION INFRASTRUCTURE

2018 - 2028

WEST COAST COUNCIL

NOVEMBER 2018



DOCUMENT RECORD

Version	Issued To	Date	Author
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Final			

WASTE STRATEGY: TRANSFER STATION INFRASTRUCTURE

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SUMMARY

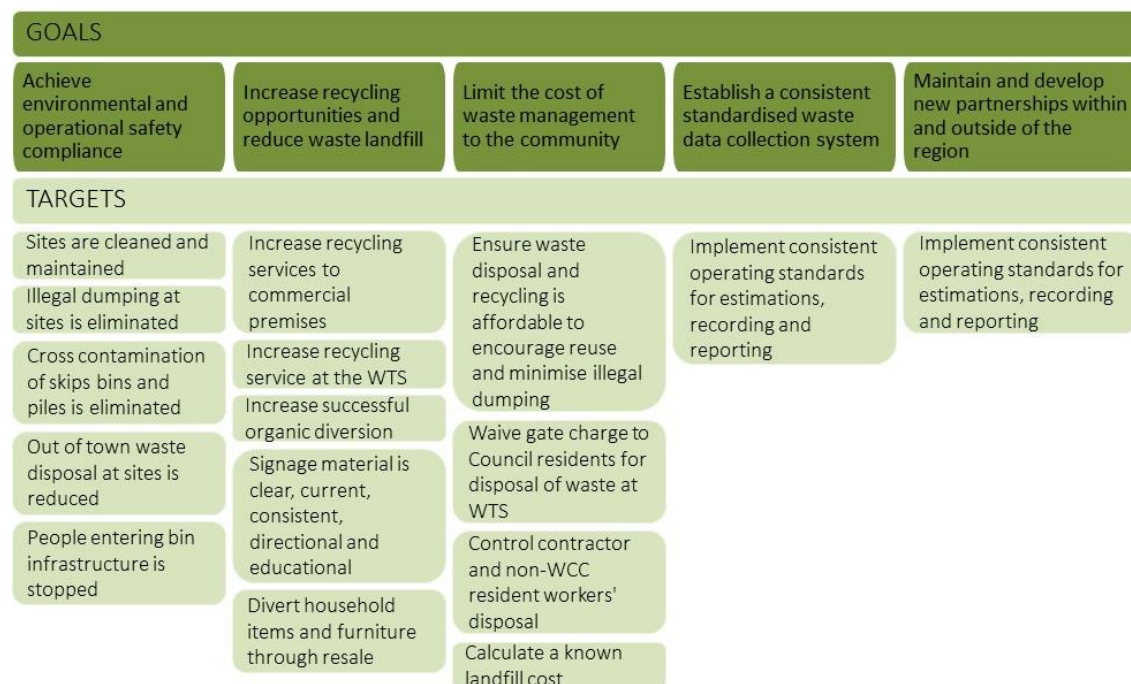
Existing waste transfer stations in the West Coast Council face environmental and operational safety challenges that are hard to manage within existing budgets and service provision. The WTSs currently operate unmanned, are open at all times and have no gate entry charge. Revenue comes from waste fees charged as part of rates to private and commercial premises.

Current operations are environmentally, financially and socially unsustainable. They pose extreme safety risks to operational staff and public users. They breach environmental compliance standards and drain resources that need to be managed conservatively to ensure current and future viability for the community.

A review and update of the National Waste Strategy (2018) will require states and councils to reduce waste generation, increase recovery and improve data collection. Tasmanian regional waste groups and Local Council Association are proactively seeking strategic collaboration opportunities ahead of expectations around container deposit schemes, national and community demands on recycling and diminishing financial viability of landfilling.

This project has included extensive waste transfer station assessments, three council workshops, consultations with 27 business, a community opinion survey with 99 responses and one community consultation workshop. In the strategy, goals, targets and actions have been developed to address issues identified in assessments whilst satisfying community and business concerns.

Council has commissioned this strategy for waste transfer station infrastructure upgrades to start to address the broader issues of waste management requirements in the future. Below is a summary of key goals and corresponding targets. The strategy includes 26 actions that have been proposed with an associated timeline.



CONTENT

1. INTRODUCTION	5
2. WEST COAST COUNCIL PROFILE	6
2.1.1. The area	6
2.1.2. The people	6
2.1.3. The economy	6
2.1.4. West Coast Council Community Plan 2025	6
3. WHERE ARE WE NOW?	8
3.1. Waste generation	8
3.2. Identified issues from waste transfer station assessment.....	9
3.2.1. Unmanned, free of charge and uncontrolled	9
3.2.2. Safety and environmental hazards	9
3.2.3. Contamination	9
3.2.4. Commercial and out-of-state users.....	9
3.2.5. Litter.....	9
3.2.6. Bins and bin infrastructure.....	9
3.2.7. Inconsistent signage	9
3.3. Consultations summaries	10
3.3.1. Business consultation	10
3.3.2. Community Consultation	11
4. VISION AND GUIDING PRINCIPLES.....	12
4.1. Vision	12
4.2. Principles	12
5. GOALS.....	13
6. TARGETS & ACTIONS.....	14
6.1. Achieve environmental and operational safety compliance	14
6.2. Increase recycling opportunities and reduce waste to landfill	15
6.3. Limit the cost of waste management to the community	16
6.4. Establish a consistent, standardised waste data collection system.....	17
6.5. Maintain and develop new partnerships within and outside of the region	18
APPENDIX 1: TIMELINE FOR ACTIONS	19
APPENDIX 2: SUMAMRY OF GOALS, TARGETS, ACTIONS.....	20

Figure 1: Map locating WCC WTSS. 6

Figure 2: The Waste Hierarchy (EPA NSW). 12

Table 1: Focus areas and strategies relating to waste within the WCC Community Plan 2025..... 7

Table 2: Number of tenements with kerbside waste and recycling services

Table 3: Waste generation data 2013-2017

Table 4: Number of businesses consulted in each township. 10

Table 5: Principles of ESD. 12

1. INTRODUCTION

The West Coast Council (WCC) is the largest council in Tasmania in terms of area, but has a relatively small population of 4,162 residents (2017).¹ This low population density (0.5 people/km²) forms the basis of the main challenge for the municipality, which is to ensure sufficient service provision to prevent illegal dumping whilst running an efficient waste management program that is financially viable for a small council. An additional challenge comes from the large increase in temporary residents and tourists over the holiday season. This transient community generates increased volumes.

Existing waste transfer stations (WTS) face environmental and operational safety challenges that are hard to manage within existing budgets and service provision. The WTSs currently operate unmanned, are open at all times and have no gate entry charge. Revenue comes from waste fees charged as part of rates to private and commercial premises.

Current operations are environmentally, financially and socially unsustainable. They pose extreme safety risks to operational staff and public users. They breach environmental compliance standards and drain resources that need to be managed conservatively to ensure current and future viability for the community.

With little or even no diversion being achieved, landfill space is being filled with divertible material. This costly exercise is evidenced in the planning, approval and compliance costing for the management and rehabilitation required for additional landfill cell development. Misuse of the sites puts operating staff at risk through having to handle contaminated bins containing bulky obstacles as well as dangerous substances such as asbestos and flammable liquids. Public users are exposed to the same dangerous substances and it is known that there are certain members of the community who illegally enter bins, which poses obvious health risks. The environmental non-compliance relates to debris, litter, spills and illegal substances entering the natural landscape. Additional to environmental devastation, the potential future financial cost should be made clear to the community.

A review and update of the National Waste Strategy (2018) will require states and councils to reduce waste generation, increase recovery and improve data collection. Tasmanian regional waste groups and Local Council Association are proactively seeking strategic collaboration opportunities ahead of expectations around container deposit schemes, national and community demands on recycling and diminishing financial viability of landfilling. The WCC Community Plan 2025 has recognised the importance of improved waste practices and infrastructure as well as employment opportunities in the recovery and recycling sector.

Council has commissioned this strategy for waste transfer station infrastructure upgrades to start to address the broader issues of waste management requirements in the future. This strategy details the plan to achieve five key goals to improve the WTSs in the WCC.

¹RemPlan 2017, *West Coast Council Community Profile*, <https://www.communityprofile.com.au/westcoast>.

2. WEST COAST COUNCIL PROFILE

2.1.1. *The area*

West Coast Council covers 9,575 km² which is sparsely populated at 0.5 people/km². The natural landscape's wild rivers, mountains and highlands, lush rainforest and rugged coastlines define the area's key industries of mining, tourism and aquaculture, and are deeply connected to the community's sense of identity. The council's waste disposal sites are located in Tullah, Rosebery, Trial Harbour, Granville Harbour, Strahan, Queenstown and Zeehan.

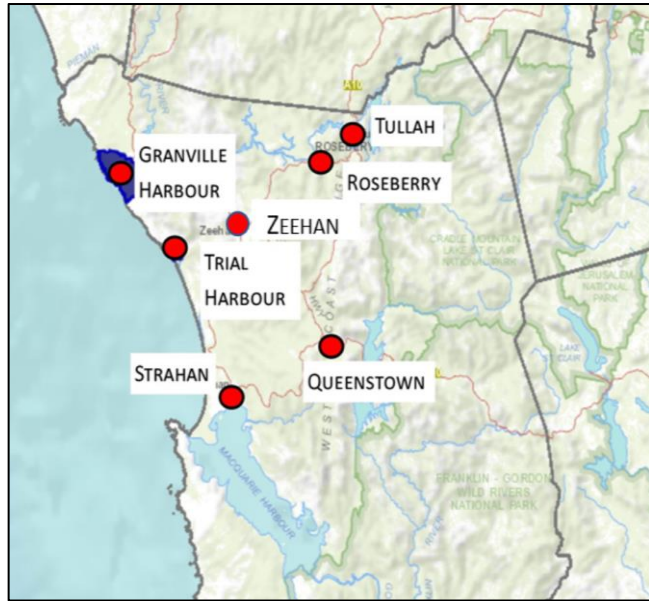


Figure 1: Map locating WCC WTSs.

2.1.2. *The people*

The population of the West Coast was 4,162 in 2017. The median age is 39, 20% of the population are children (under 14 years of age) and 13.8% are elderly (over the age of 65). Almost 60% of the people are employed full-time and a further 25% part-time, leaving a 10.4% unemployment rate. The region's demographic issues are the declining population, low per-capita GDP, an aging population and a relatively low level of higher education. Some people working within the region live externally in other Tasmanian councils or interstate.

2.1.3. *The economy*

The West Coast Council Community Plan 2025 summarises that WCC economic output is estimated at \$1,230 million per annum, 70% of which is represented by the mining sector and approximately 5% each by manufacturing, construction and tourism. The mining sector is also the biggest employer, accounting for 39% of workers. This is followed by tourism at 15%, retail at 6.7% and education & training at 6.2%. A key issue with the region's economy is the lack of diversity and its dependency on the mining sector.

2.1.4. *West Coast Council Community Plan 2025*

In 2015, the Council engaged in an extensive planning process to create their Community Plan Document. The process actively sought the input of 40% of the area's population through industry and community workshops, surveys, information stands and online resources. The plan set out the council's general direction and vision with many of the 'focus areas' and certain strategies relating in some way to waste strategy:

Table 1: Focus areas and strategies relating to waste within the WCC Community Plan 2025

Community Plan 2025 Focus Area	Community Plan 2025 Outcomes	Existing Strategy (numbered) or potential interaction of this waste strategy initiative
People & the community: social wellbeing, education & training	1.5 The communities' social needs are supported through the provision of a range of essential social and community services.	Waste disposal facilities & kerbside services must be considered an essential community service.
Economy: economic development	2.1 A strong and diversified economic base. 2.2 A sustainable, dynamic and resilient business sector	2.2.8 Encourage new and existing businesses to incorporate environmentally sustainable practices that minimise environmental impacts and adhere to best practice initiatives.
		The resource recovery and recycling industry has the potential to create businesses and jobs and should be considered in the diversification of WCC's economy. The demand from the general public, especially visitors, for recycling will increase. A focus on driving a greater tourism industry is based on an interaction with the natural landscape will benefit from the community's waste awareness.
Infrastructure: community facilities	3.1 Well planned and resourced assets and infrastructure. 3.4 Environmentally sensitive development to achieve sustainability in water and waste management.	3.4.5 Development of a Waste Management Strategy for the region, implemented for domestic recycling, green waste collection, processing and industry waste reduction plans.
		3.4.6 Waste depots comply with standards and regulations relating to pollution control and climate change.
Environment: natural resources, waste and water management	4. 1 The region's environmental assets are maintained and preserved for future generations.	4.1.1 Utilise and protect the area's natural resources, water and energy.
		4.1.2 Support community based environmental protection initiatives.
		4.1.3 Be responsive to environmental issues effecting the region.
		Waste must be included in effective environmental management, the protection of land & water and climate change impact.

3. WHERE ARE WE NOW?

3.1. Waste generation

1,865 tenements have a weekly 240-litre serviced waste kerbside collection. The only unserviced areas are Trial Harbour, Granville Harbour and some rural properties. Recycling bins are voluntary and collected once a month from 248 tenements (13% of the total tenements).

From the kerbside service approximately 17.8 tonnes of waste is collected weekly and 3.6 tonnes of recycling monthly.

Table 2: Number of tenements with kerbside waste and recycling services

Kerbside services	Waste	Recycling
Queenstown	850	123
Strahan	330	53
Tullah	70	13
Rosebery	290	45
Zeehan	325	14
Total	1,865	248

Table 3: Waste generation data 2013-2017

	2013-2014	2014-2015	2015-2016	2016-2017	Conversion ratio*	2016-2017
	Volume (m ³)				(m ³ to tonnes)	Weight (tonnes)
Kerbside waste	3,259	12,150	2,957.6	2,964	0.15	444.6
WTS waste	16,663		21,142	27,941		
Landfill waste		25,238.5				
Commercial lifts	13,190		12,600	8,766		
MDG (commercial)		2,380		2,300		
Recycling collection				689.28	0.063	43.4
Green waste from WTS				4,701	0.231	1,085.9

* Conversion ratio Zero Waste SA, 'Solid waste and recycling reporting template', Government of South Australia.

3.2. Identified issues from waste transfer station assessment

3.2.1. Unmanned, free of charge and uncontrolled

The unmanned WTSs means that there is no interaction between users and staff, which in turn results in a lack of information relayed. As such, users dispose of dangerous material (gas bottles, oil, asbestos, batteries, tyres) which carry safety risks for themselves, other users, staff and the environment. Users may also dispose of material at the incorrect area within the site which may contaminate potential diversion material such as green waste and inert material.

3.2.2. Safety and environmental hazards

- Material is placed incorrectly, creating hazardous obstacles for other users and staff.
- Legal disposal of asbestos is managed through a paid service at the landfill at the cost of \$318/m³. However, the lack of control at the WTS poses a potential issue of illegal dumping at all sites.
- Oil spills.
- Uncontrolled disposal of batteries.
- Un-gassed fridges in scrap piles accessible to public.

3.2.3. Contamination

There was a high degree of contamination at each station, in every bin and every stockpile. As a result, most material will likely be landfilled. Material is contaminated by fats, paint and oil which are unsafe to be collected in front loaders.

3.2.4. Commercial and out-of-state users

A large amount of the waste disposed at the WTS is from commercial enterprises. This includes cardboard, black bin bags and recycling. 'Drive in, drive out' employees and contractors in the building and construction industry bring rubbish from other council areas where disposal is costly, and dispose of it for free in the WCC.

3.2.5. Litter

There is extensive litter at the WTS sites, on the roads and in surrounding vegetation. Uncontrolled disposal contributes to this by allowing users to place material that is likely to blow away in stock piles rather than containers.

3.2.6. Bins and bin infrastructure

Bins are old, deteriorated and rusty. Spacing between the front-lift bins and the protective roof is narrow resulting in inconvenient and difficult disposal for users, especially from raised ute trays. Consequently, some users used the bulk bins for disposal of general household waste.

3.2.7. Inconsistent signage

The signage is inconsistent between sites. Many signs lack instructions such as arrows clearly indicating in which bin/pile/area which material should be disposed.

3.3. Consultations summaries

3.3.1. Business consultation

A total of 27 businesses were engaged in consultation over two days in July 2018.

Table 4: Number of businesses consulted in each township.

Township	Nr of businesses consulted
Tullah	3
Rosebery	5
Zeehan	5
Strahan	8
Queenstown	6
Total	27

Key Findings

- Businesses are paying a commercial waste management fee on rates.
- Resistance to introduction of a gate fee.
- Strong desire for increased recycling services.
- Most waste generated includes cardboard, containers (aluminium, steel and plastics) but also mentions of e-waste, green waste and soft plastics.
- Little opposition to restricted access by gate and hour but not at an extra charge.
- Support for a manned station that generated work.
- Significant interest in some tip shops and salvageable items being put on sale.
- Great concern about illegal dumping and littering.
- Support for charges to apply to non-rate payers and contractors.
- Lack of trust that recycling was being recycled.
- Lack of awareness of council-operated commercial collection.
- Great concern over of lack of reliability of the council kerbside service.
- Strong reluctance to a closure of Tullah WTS.
- Some interest in community composting projects.

3.3.2. *Community Consultation*

One community consultation session with approximately 20 attendees was held in October 2018. A survey was distributed online and in paper form over five weeks and received 99 responses.

Key Findings

- Households are charged a fee for WTS management, additional to collection, on rates.
- Broad appreciation for exiting system including services and accessibility.
- Great opposition to raising rates and/or a charge for use of sites.
- Concern for litter, illegal dumping, forest fires and dumped waste with support for controlling access to site by gates
- Concern for safety of people in bins and site fires due to lack of personnel on sites.
- Conditional acceptance of restricting access to the sites. Providing:
 - No charge to the community
 - Consideration for shift workers
 - Services for tourists are maintained
- Conditional acceptance of increased service provision at sites including:
 - Potential to man sites at certain times to offer assistance to elderly
 - Recycling options for material such as aluminium, cardboard, plastics, e-waste and scrap steel.
- Desire to provide a local men's shed with opportunity to collect aluminium cans from site.
- Support for the separation of 'tip shop' items in some way. Potentially through:
 - Engagement and independent management of a local charity
 - Delegation to scouts
 - Simply having a separate covered and safe area for the separation of items then available for free for anyone. This would limit people jumping into the bins.
- Great emphasis on the need for education in the community including opportunities:
 - In school and child care facilities
 - Improved signage at the sites, especially if the service provision increases
 - For projects that encourage diversion and landfill avoidance such as:
 - Home composting
 - Separating material at home
- Potential to include work for the dole in WTS management.

4. VISION AND GUIDING PRINCIPLES

4.1. Vision

“The Council provides clean and safe to use waste transfer stations that are operated by motivated, informed and helpful staff. The service provision at the sites are in continual improvement working within current constraints to maximize landfill diversion and minimize cost to the community now and into the future.”

4.2. Principles

Waste management at all scales can, and should, strive for strategies relating to the waste hierarchy, an internationally accepted guide for prioritising waste management practices. The benefits of investing higher up in the hierarchy is amplified for regional areas where the financial cost of recycling and environmental cost to a landscape that supports the livelihood is felt to a greater degree.

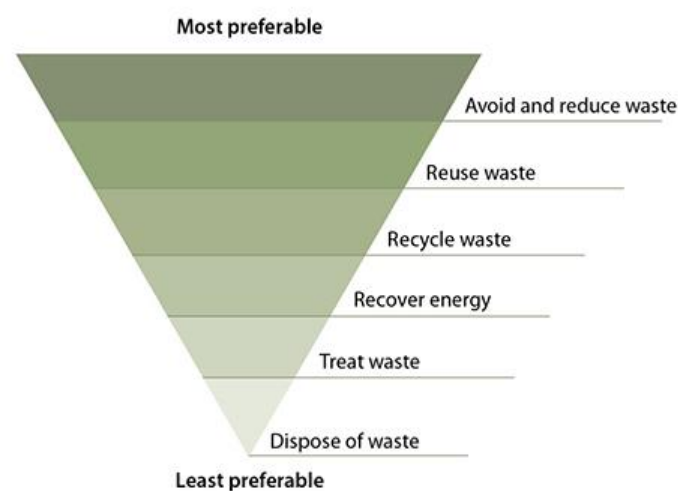


Figure 2: The Waste Hierarchy (EPA NSW).

Further, the principles of ecologically sustainable development (ESD) underpin the need for change and the complexity of issues to be addressed. The principles of ESD are:

Table 5: Principles of ESD.

The precautionary principle	Best practice is preferable in situations where the full complexity of negative impacts is not understood.
Intergenerational equity	The cost of no action now will be a burden to future generations.
Conservation of biological diversity & ecological integrity	Pollution of the environment and ecosystems to be avoided given our high degree of reliance on them for livelihoods.
Polluter pays principle	The generator of waste must pay for the treatment and management of waste.

5. GOALS

The WCC infrastructure strategy 2018-2028 sets the basis for what waste infrastructure should be and what should be achieved by the community. These goals describe where we want to be in 2028.

1. Achieve environmental and operational safety compliance
2. Increase recycling opportunities and reduce waste to landfill
3. Limit the cost of waste management to the community
4. Establish a consistent standardised waste data collection system
5. Maintain and develop new partnerships within and outside of the region

6. TARGETS & ACTIONS

To achieve the goals of this strategy, a subset of targets and actions indicates the steps to be taken, along with their timeframe.

6.1. Achieve environmental and operational safety compliance

Objective: Ensure the safety of operational staff and public users of the WTSs whilst managing the site in a responsible way to ensure standards that limit financial and environmental impacts now and in the future.



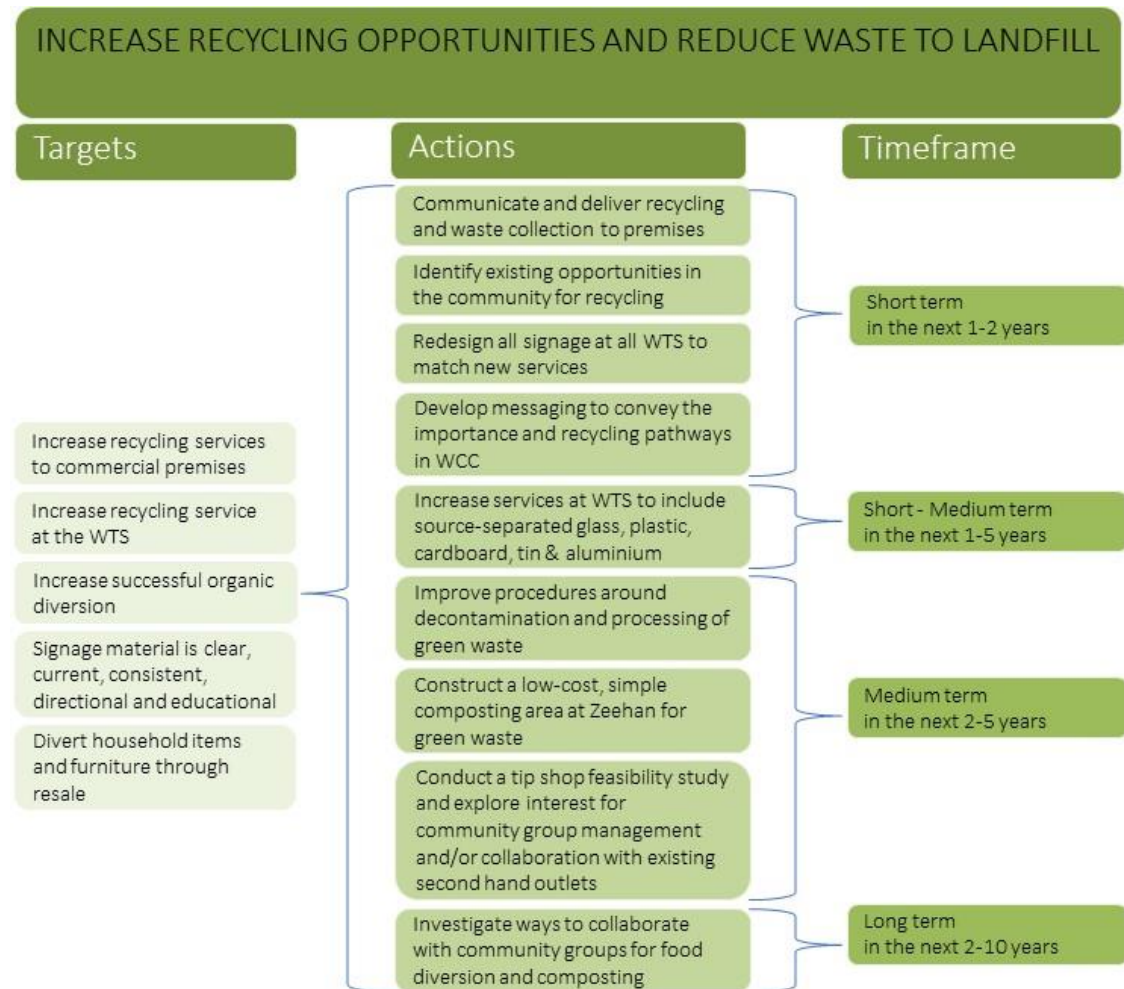
Issues around cleanliness, dumping of illegal material and cross contamination have major safety and environmental concerns. The reasons for these issues are due to a lack of a control coupled with an engrained culture of lack of accountability. To address the concerns and issues it will be vital to control access and use of the site through fencing and lockable gates. Site access will need to be restricted to work within a limited budget and to avoid gate fees. The approach should be flexible including some self-managed access assisted through key loans or swipe cards in combination with staffed opening hours. Having staff on site at allocated times will also provide a service to the section of community who need help disposing waste or are seeking information.

By restricting access it is expected that initially, given the established culture, there will be some vandalism and illegal dumping. As such, planning and executing an enforcement program is essential to change behaviours over time.

A controlled and managed site will allow for the provision of a cleaner and more user-friendly appearance and outlay. It will also increase diversion through assistance and manual sorting which will ensure the cleanliness of potentially sellable items.

6.2. Increase recycling opportunities and reduce waste to landfill

Objective: Improve the WCC's financial resilience to predictable changes in state and national waste management policy whilst improving environmental performance and user experience.



Opportunities presented above are based on a timeline that can be continuously improved. Short-term, low-cost options rely on changed behaviour and operation improvement through better management of existing networks: commercial collections, community recycling and producing a clean organic stream. Building up the capacity to increase diversion through tip shops and increase sorting services at the WTS will require investigation into available markets and pathways prior to commencing collections.

Updated information on signs and printed material is needed with the upgrade of infrastructure and service provision. Informative signs will be essential when expecting increased sorting of material at the WTS by users. At a minimum this should include a map of each site and signs at every disposal bin or point. Messaging that describes the process and pathway of recycling and the importance of the individuals' contribution is broadly accepted to be successful in achieving behavioural change.

The scale of a composting site could vary depending on available feedstock and market demand. A low-cost options does not require infrastructure but only operational management adjustments. The fire and contamination risk that current green waste poses highlights the need for a solution to minimise hazards and financial costs in the future.

6.3. Limit the cost of waste management to the community

Objective: Seek innovative solutions for continuous improvement of service provision that represents the true existing cost and explores increased efficiencies in systems rather than increasing charges.



The introduction of a gate fee is likely to be ineffective in achieving improved waste management. Rather, the proposed pathway explores changes in operations and efficiencies that rely on restricted access of sites. The communication of no-charge but restricted access should form a central message to residents when changes are implemented.

Restricted access will allow the Council to charge non-council rate payers for the use of disposal services. Initially, this change will likely be met with opposition and illegal dumping. It is vital that policing and enforcement is provided to ensure behaviour change in the short to medium term.

Another aspect that can increase efficiency is the reduction of landfilling and vandalism. Initially, the Council will need to compile the true cost of these aspects of waste management to then be able to explore costs saved that can be redirected into improving service provision.

6.4. Establish a consistent, standardised waste data collection system

Objective: Gather useful data to target future education and strategies, set measurable indicators of change and be prepared for predictable future requirements from state and national policy.



Collecting data and reporting quantities of material being landfilled and diverted is widespread across Australia and is emphasised in the upcoming National Waste Strategy. Tasmanian regional waste groups are working to standardise the process. Collating and analysing data to make calculated estimations of projects form the base for successful funding applications.

In the short term, the Council needs to strategically design a data collection process which includes a volume estimation matrix with or without conversion rates to weight. This would formalise existing procedures for recording and reporting. The design process should include the operational team to harness existing knowledge and encourage acceptance. An official training process should take place once the design has been completed.

With the unique arrangement of all waste being taken to Zeehan, the Council has the opportunity to install a weighbridge at one location with the capacity of recording the actual weight of all incoming waste and recycling.

6.5. Maintain and develop new partnerships within and outside of the region

Objective: identification of existing opportunities for collaborative waste management diversion that is locally specific and financially smart.



The West Coast is geographically isolated and, given its population, generates a relatively small quantity of waste. Seeking solutions for reuse and recycling within the region will make more financial sense. The Council should investigate internal capacity for processing and use of compost. Also, exploring transportation pathways of existing vehicles of key stakeholders may reveal simple solutions for transporting material for sale.

Engaging with a regional waste management group will provide support for projects through information sharing and potential funding. As such, it is advised that the WCC should approach the Cradle Coast Authority regional waste group with the intention to join.

APPENDIX 1: TIMELINE FOR ACTIONS

Nr.	Action	Timeframe
1.1	Fence all sites and institute lockable gates	Short
1.2	Clean sites from debris and litter	Short
1.3	Upgrade bin infrastructure: reduce the number of bins, perform upkeep to coverings and improve signage	Short
1.4	Research and implement gate management options including staffed opening hours, swipe cards or keys available to community residents/select business	Short
1.5	Design and properly cost for enforcement of changes to service provision including camera surveillance, policing and administering fines	Short
2.1	Communicate and deliver recycling and waste collection to premises	Short
2.2	Identify existing opportunities in the community for recycling	Short
2.7	Redesign all signage at all WTS to reflect new services	Short
2.8	Develop messaging to convey the importance and path of recycling in WCC	Short
4.1	Create a standard unit (m3 or tonne) to measure and a key on how to estimate volumes based on vehicles/bin capacity	Short
4.2	Create reporting procedures for drivers, management and council	Short
3.5	Implement a charge for non WCC users of the WTS	Short-Medium
2.3	Increase services at WTS to include source separated glass, plastic, cardboard, tin & aluminium	Short - Medium
4.3	Train operation and management staff	Short - Medium
3.1	Communicate what cost illegal dumping, vandalization and cross contamination cost the community.	Short - Long
3.3	Explore funding pathways for infrastructure upgrades	Short - Long
3.4	Restructure existing resources by reducing collection frequencies, reducing bin infrastructure exposed to deterioration whilst allowing for seasonal fluctuations of increased demand	Short - Long
2.4	Improve procedures around decontamination and processing of green waste	Medium
2.5	Construct a low cost simple composting area at Zeehan for green waste	Medium
2.9	Conduct a tip shop feasibility study and explore interest for community group management and/or collaboration with existing second hand outlets.	Medium
3.2	Make use of council created compost for Zeehan landfill rehabilitation material.	Medium
3.6	Investigate true cost of landfill for Council (per m3 of airspace versus income and compaction density)	Medium
5.1	Approach the Cradle Coast Authority regional waste group with intention to join	Medium - Long
5.2	Identify existing reprocesses and potential pathways for recycling considering key stakeholders in the mining and aquaculture industry.	Medium - Long
2.6	Investigate a collaboration with community groups for food diversion and composting	Long
4.4	Implement a weighbridge at Zeehan	Long

APPENDIX 2: SUMAMRY OF GOALS, TARGETS, ACTIONS

	Goal	Section	Target	Nr.	Action	Timeframe
1	Achieve environmental and operational safety compliance	1.A	Sites are cleaned and maintained	1.1	Fence all sites and make gates lockable	Short
		1.B	Illegal dumping at sites is eliminated	1.2	Clean debris and litter from sites	Short
		1.C	Cross contamination of skips bins and piles is eliminated	1.3	Upgrade bin infrastructure: reduce the number of bins, carry out maintenance work on coverings and improve signage	Short
		1.D	Out of town waste disposal at sites is reduced	1.4	Research and implement gate management options including staffed opening hours, swipe cards or keys available to community residents/select business	Short
		1.E	People entering bin infrastructure is stopped	1.5	Design and properly cost for enforcement of changes to service provision including camera surveillance, policing and administrating fines	Short
2	Increase recycling opportunities and reduce waste to landfill	2.A.	Increase recycling services to commercial premises	2.1	Communicate and deliver recycling and waste collection to premises	Short
		2.B	Increase recycling service at the WTS	2.2	Identify existing opportunities in the community for recycling	Short
				2.3	Increase services at WTS to include source-separated glass, plastic, cardboard, tin & aluminium	Short – Medium
		2.C	Increase successful organic diversion	2.4	Improve procedures around decontamination and processing of green waste	Medium
				2.5	Construct a low-cost, simple composting area at Zeehan for green waste	Medium

				2.6	Investigate ways to collaborate with community groups for food diversion and composting	Long
		2.D	Signage material is clear, current, consistent, directional and educational	2.7	Redesign all signage at all WTS to match new services	Short
				2.8	Develop messaging to convey the importance and recycling pathways in WCC	Short
		2.E	Divert household items and furniture through resale	2.9	Conduct a tip shop feasibility study and explore interest for community group management and/or collaboration with existing second hand outlets	Medium
		3.A	Ensure waste disposal and recycling is affordable to encourage reuse and minimise illegal dumping	3.1	Communicate the costs of illegal dumping, vandalism and cross-contamination to the community	Short – Long
				3.2	Make use of existing Council compost for Zeehan landfill rehabilitation material.	Medium
				3.3	Explore funding pathways for infrastructure upgrades	Short – long
3	Limit the cost of waste management to the community	3.B	Waive gate charge to Council residents for disposal of waste at WTS	3.4	Restructure existing resources by reducing collection frequency, reducing bin infrastructure exposed (and therefore deteriorating) whilst allowing for seasonal fluctuations in demand for services	Short – Long
		3.C	Control contractor and non-WCC resident workers' disposal	3.5	Implement a charge for non-WCC users of the WTS	Short – Medium
		3.D	Calculate a known landfill cost	3.6	Investigate the true cost of landfill for Council (per m3 of airspace verses income and compaction density)	Medium
4	Establish a consistent, standardised waste data collection system	4.A	Implement consistent operating standards for estimations, recording and reporting	4.1	Create a standard measurement unit (m3 or tonne) and a key indicating how to estimate volumes based on vehicles/bin capacity	Short
				4.2	Create reporting procedures for drivers, management and Council	Short

				4.3	Train operational and management staff	Short – Medium
				4.4	Install a weighbridge at Zeehan	Long
5	Maintain and develop new partnerships within and outside of the region	5.A	Research strategies and implement a partnership program	5.1	Approach the Cradle Coast Authority regional waste group with intention to join	Medium – Long
				5.2	Identify existing processes and potential pathways for recycling, considering key stakeholders in the mining and aquaculture industry.	Medium – Long