

Waste Management and Resource Recovery Strategy 2025 - 2035

City of Karratha



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Acknowledgements

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ASK also gratefully acknowledge the cooperation of the City of Karratha staff that provided information and assistance in the development of this report.

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EXECUTIVE SUMMARY

The City of Karratha Waste Management and Resource Recovery Strategy 2025–2035 provides a comprehensive roadmap for transitioning the City toward a more sustainable, efficient, and inclusive waste management system over the next decade.

Developed by ASK Waste Management, the Strategy aligns with the Waste Avoidance and Resource Recovery Strategy 2030 (WARR Strategy) and addresses the unique challenges of the Pilbara region. It aims to prioritise resource recovery, implement better practices, and enhance community engagement to address the environmental effects of waste and encourage a culture of responsibility.

Regional Context

The City of Karratha spans over 15,000 square kilometres and includes the towns of Karratha, Dampier, Wickham, Roebourne, and Point Samson, as well as several Aboriginal communities. The region's economy is driven by mining, construction, and logistics, resulting in high per capita waste generation and complex waste streams. Geographic isolation, extreme climate conditions, and limited access to recycling infrastructure present significant challenges to sustainable waste management.

Waste services must also meet the needs of a culturally diverse population, including a large Aboriginal community and transient workforce. Diversity in cultural practices, housing arrangements, and service accessibility contributes to inconsistent waste generation patterns, variable contamination rates, and service gaps, particularly in remote areas. These factors also influence levels of knowledge and awareness of correct waste practices across the community, requiring tailored education and engagement to ensure equitable access and participation.

Performance

Due to regional isolation and associated challenges, the City's waste service performance remains below the aspirational targets set by the WARR Strategy 2030.

Currently, only 9% of total waste is diverted from landfill across all streams. Municipal solid waste (MSW) achieves a higher recovery rate of 26%, though still well below the target of 60–70%. Additionally, the City generates 2.76 tonnes of waste per capita, approximately 300 kg more than state

and national averages, largely driven by industrial activity in the mining and logistics sectors.

While the City is not currently mandated to meet these targets, improving performance is essential to align with state and national policy directions, secure future funding, and reduce environmental impacts.

Community Consultation

To inform the Strategy, ASK conducted a multi-method community consultation process between February and April 2025. This included an online survey, stakeholder interviews, and place-based workshops. Key community insights included:

- Strong support for improved waste management
- Mixed views on recycling access
- Low confidence in recycling knowledge
- High satisfaction for the Weekly kerbside collection, the 7 Mile Tip Shop, and drop-off facilities
- Underutilisation of hazardous waste services
- Education and engagement gaps
- Top priorities for future initiatives including reducing landfill, improving recycling rates, and exploring composting options

Industry stakeholders identified systemic barriers to resource recovery, including high transport costs to distant processing facilities, lack of local end markets, problematic waste streams, regulatory gaps and workforce shortages. They strongly supported regional collaboration to improve infrastructure investment and economies of scale and noted a disconnect between decarbonisation efforts and recycling priorities.

Strategic Goals and Actions (2025 – 2035)

The Strategy is structured around eight strategic goals, each supported by targeted objectives and actions.

1. Waste Infrastructure and Operations

Ensure infrastructure is environmentally responsible, compliant, and aligned with better practice standards. Key actions include: Resolve legacy stockpiles, Develop a masterplan for the Seven Mile Waste Disposal Facility, Explore methane capture and waste-to-energy feasibility.

2. Waste Services

EXECUTIVE SUMMARY

Deliver inclusive, efficient services that support waste avoidance and recovery. Key actions include: Improve kerbside recycling and bin standardisation, Assess feasibility of organics recovery and FOGO services, Enhance services in remote and Aboriginal communities.

3. Policies and Procurement

Strengthen governance and planning to enable strategic waste outcomes. Key actions include: Adopt waste-specific local laws, Integrate waste into strategic and emissions reduction planning.

4. Data, Information and Economics

Support evidence-based decision-making and financial sustainability. Key actions include: Conduct regular kerbside audits, Calculate whole-of-life costs for landfill operations.

5. Litter and Illegal Dumping

Reduce illegal dumping and littering across the City. Key actions include: Develop a coordinated litter and dumping strategy, Improve surveillance and community engagement.

6. Behaviour Change Programs

Empower the community to reduce waste through education and engagement. Key actions include: Deliver multi-year education campaigns, Tailor messaging for transient and culturally diverse populations.

7. Aboriginal Communities

Ensure services and infrastructure meet the needs of Aboriginal communities. Key actions include: Improve access and equity through formal partnerships, Align with Closing the Gap targets.

8. Regional Efficiencies

Advance collaboration to improve waste outcomes across the Pilbara. Key actions include: Establish a regional officers advisory group, Facilitate a regional waste management alliance.

Implementation and Monitoring

The Strategy sets out a clear, phased approach to implementation over the next decade, with actions prioritised as short-term (2025–2027), medium-term (2027–2030), and long-term (beyond 2030). Successful delivery will require integration into the City's Corporate Business Plan, Long-Term Financial Plan, and annual budgets, ensuring alignment with broader strategic and financial priorities.

Key principles include:

- Phased delivery of actions based on priority and complexity.
- Adequate resourcing, including project management, technical expertise, and communications support.
- Collaboration and partnerships with regional stakeholders, industry, and the community to leverage shared resources and expertise.

Monitoring will be embedded in the City's strategic planning and reporting frameworks, with regular reviews to ensure the Strategy remains responsive to emerging waste issues, legislative changes, and community needs.

1 INTRODUCTION

The City has engaged ASK Waste Management to develop its *Waste Management and Resource Recovery Strategy 2025 – 2035* (WMRRS or the Strategy). The Strategy is developed in alignment with the State Government's *Waste Avoidance and Resource Recovery Strategy 2030* (WARR Strategy) and the Department of Water and Environmental Regulation's (DWER) *Waste Plan Resource Kit*, as well as relevant City strategic documents.

The primary goal of the project is to establish a framework for effective and sustainable waste management within the City over the next decade. The strategy aims to prioritise resource recovery, implement better practices, and enhance community engagement to address the environmental effects of waste and encourage a culture of responsibility.

1.1 REGIONAL CONTEXT

The City of Karratha is located in the Pilbara region of north-western Western Australia, approximately 1,500 kilometres north of Perth. Covering an area of 15,238 square kilometres, it includes the towns of Karratha, Dampier, Wickham, Roebourne, and Point Samson, and the Aboriginal communities of Mingullatharndo, Weymul and Cheeditha.

As of 2024, the City had an estimated population of 24,716, with a median age of 32, reflecting a predominantly young, working-age demographic. Approximately 11.7% of the population identifies as Aboriginal and/or Torres Strait Islander, contributing to the City's rich cultural diversity. Economic output is approximately \$22.20 billion annually, driven by the mining, construction, and logistics sectors. The region has a high labour force participation rate, with 14,910 employed residents and a low unemployment rate of 2.0%. The median income of \$79,908 significantly exceeds the national average, largely due to the strength of the resource sector (City of Karratha, n.d).

Karratha serves as a logistics hub for the Pilbara's resource sector, with the Seven Mile Waste Disposal Facility playing a central role in supporting industrial operations. These industries generate a wide range of waste streams, contributing to significantly elevated per capita waste generation compared to metropolitan areas. The scale and intensity of industrial activity place considerable pressure on local waste services and infrastructure. Environmental conditions, including extreme heat and seasonal weather events, further complicate service delivery.

The City of Karratha faces complex waste management challenges driven by its geographic isolation, high industrial activity, and limited access to recycling infrastructure. Transporting waste and recyclables over long distances to metropolitan processing facilities is often economically unviable, undermining the financial sustainability of recycling programs and contributing to low recovery rates. These challenges are particularly pronounced in remote communities, as they lack local sorting and processing options, resulting in higher landfill reliance, an outcome inconsistent with federal and state policy objectives.

Furthermore, the lack of viable end markets for many recyclable material streams means that even when materials are collected, they may not be reprocessed into new products, further undermining recovery rates. While product stewardship programs exist for certain waste streams, many exclude collection and transport costs, shifting the financial burden to local governments and reducing the equity and effectiveness of these schemes.

The City's substantial transient workforce, particularly associated with fly-in-fly-out operations, can lead to inconsistent waste generation patterns and make it difficult to deliver consistent education and engagement initiatives, impacting participation and contamination rates. Workforce shortages also pose a problem, as it can be difficult to recruit and retain qualified staff for waste management roles in remote areas, particularly due to the hot and harsh working conditions that characterise the Pilbara region.

Standardised service approaches commonly used in local government often fail to meet the needs of culturally diverse communities. Several Aboriginal communities within the City of Karratha are located outside gazetted townsites, where access to standard waste services is often limited or inconsistent. These gaps highlight the importance of aligning waste strategies with the Federal Government's Closing the Gap Target 9, which seeks equal access to essential infrastructure for Aboriginal and Torres Strait Islander peoples.

Recognising and addressing these issues will be essential to developing a resilient and sustainable waste strategy for the City.

2 DRIVERS AND INFLUENCES

This section outlines the drivers and influences that are expected to impact the City's waste outcomes over the next decade.

2.1 GLOBAL INFLUENCES

Australia's waste policy is shaped by global trends, agreements, and disruptions that have redefined how waste is managed and valued. These influences have driven a shift from traditional disposal models toward a more circular, sustainable, and self-sufficient approach.

2.1.1 UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (UNSDGS)

As a signatory to the UNSDGs, Australia aligns its waste strategy with goals such as *SDG 12: Responsible Consumption and Production*. This supports national targets for waste minimisation, recycling, and circular economy practices.

2.1.2 INTERNATIONAL ENVIRONMENTAL AGREEMENTS

Australia is a signatory to key global agreements that shape waste policy, including the 'Basal Convention', which regulates hazardous waste movements and the 'Paris Agreement', which influences waste policy through climate action, particularly in reducing landfill emissions.

2.1.3 INTERNATIONAL WASTE TRADE DISRUPTIONS

The 2018 Chinese waste import ban exposed Australia's reliance on overseas recycling markets. In response, Australia banned the export of unprocessed waste, prompting investment in domestic recycling infrastructure. This shift has placed greater pressure on regional areas to manage waste locally, despite limited infrastructure and economies of scale.

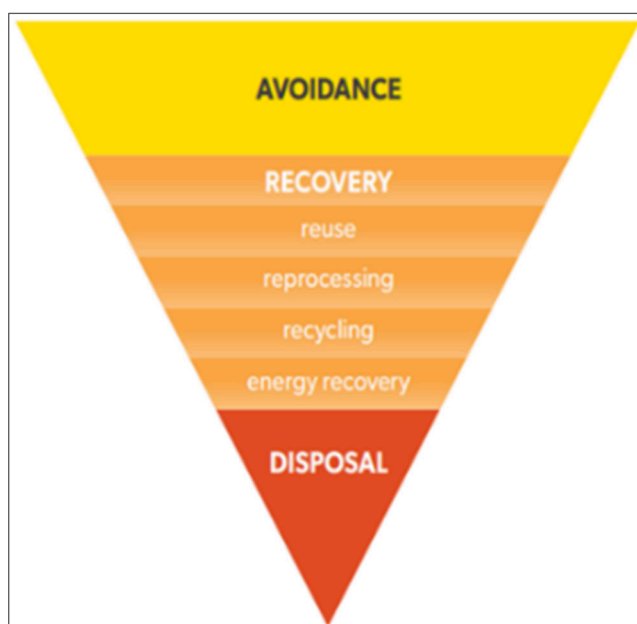
2.1.4 GLOBAL PUBLIC AND MARKET PRESSURE

Rising global concern over plastic pollution, marine debris, and environmental degradation has led to stronger public expectations and market shifts. This has accelerated the development of product stewardship schemes, single-use plastic bans, and the development of extended producer responsibility frameworks.

2.1.5 THE WASTE HIERARCHY

The waste hierarchy is a globally recognised framework that ranks waste management options by environmental preference, starting with avoidance and ending with disposal (**Figure 2.2**). Embedded in Australia's waste policy, it guides investment, infrastructure planning, and education, supporting the shift away from landfill toward more sustainable resource recovery practices.

Figure 2.1: Waste hierarchy



2.1.6 CIRCULAR ECONOMY MOMENTUM

Global momentum toward a circular economy, where materials are reused, recycled, and kept in circulation, has influenced Australia's policy direction. A circular economy refers to the flow of materials and energy – it moves away from the linear 'take, make, use and dispose' model to one that keeps materials and energy circulating in the economy for as long as possible. The key differences between the linear and circular economy and how this approach involves all sectors and consumers, rather than relying on the waste sector to recycle and recover what is possible at 'the end of the pipe', are provided in **Figure 2.2**.

Figure 2.2: Circular economy vs current approach (WARR Strategy 2030)

Current approach	Circular economy
<p>A linear flow diagram showing a single path from 'take' to 'make' to 'use' to 'dispose'.</p>	<p>A circular flow diagram showing a continuous loop of materials. The cycle includes: new materials, design, production/remanufacturing, distribution, consumption/use/repair/maintain, collection, and recycling, which feeds back into new materials.</p>
Linear flow of materials – 'take, make, use and dispose' model.	Circular flow of materials – materials sorted and retained in the economy for as long as possible.
Limited use of renewable materials and energy.	Preference for renewable materials and energy.
Significant volumes of materials disposed of and lost to the economy. Loss of embodied materials, energy and water.	Materials recovered as high up the waste hierarchy as possible. Embodied materials, energy and water retained in the economy. Organic materials re-enter and regenerate the environment safely (for example, as compost).
Materials managed locally and globally.	Preference to manage materials locally to reduce the costs and impacts of transport, and to provide local employment and investment opportunities.
Economic value of materials, employment and investment not fully accounted for.	Economic value of materials, employment and investment accounted for.
Limited focus on life cycle thinking.	Products designed and manufactured to minimise environmental impact through whole of life.

2.2 LEGISLATIVE DRIVERS

Australia's waste policy is shaped by a combination of global influences, national frameworks, and state legislation, all of which guide the transition toward a circular economy and improved waste outcomes. These drivers are described in the sections below.

2.2.1 NATIONAL

Australia's national waste policy is guided by the *National Waste Policy (2018)* and the *National Waste Policy Action Plan 2024*, released by the Australian Government through the Department of Climate Change, Energy, the Environment and Water (DCCEEW). These frameworks establish shared targets and responsibilities across all levels of government, industry, and the community. Key national targets include:

- Reduce total waste generated by 10% per person by 2030.
- Achieve an 80% average resource recovery rate from all waste streams.
- Halve the amount of organic waste sent to landfill.
- Phase out problematic and unnecessary plastics.
- Increase the use of recycled content in government and industry procurement.
- Improve national waste data collection and transparency.

These targets are supported by major national initiatives such as:

- The *Recycling Modernisation Fund*, which co-invests in new recycling infrastructure.
- The *COAG Waste Export Ban* on the export of unprocessed waste materials (plastic, paper, glass, tyres).
- The *National Food Waste Strategy (2017)*, released by the Department of the Environment and Energy, which aims to halve food waste by 2030.
- The *National Circular Economy Framework (2024)*, developed by DCCEEW, which serves as a blueprint for Australia's transition to a circular economy, setting out a national ambition to double Australia's circularity by 2035.

2.2.2 STATE

At the state level, Western Australia's waste policy is guided by the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act) which provides the legislative foundation for waste management, resource recovery, and the operation of the Waste Authority. This Act underpins the *Waste Avoidance and Resource Recovery Strategy 2030*, developed by the Waste Authority and the Government of Western Australia which sets the strategic direction for transitioning to a low-waste, circular economy (see **Section 2.2.3**).

This strategic direction is supported by several key initiatives including:

- The *Waste Authority Business and Action Plan*, which outlines the specific actions, timelines, lead responsibilities and collaborations that will be progressed to achieve the waste strategy's objectives.
- The *State Waste Infrastructure Plan*, which provides a long-term framework for planning and developing waste infrastructure across WA.
- The *Plan for Plastics*, which phases out single-use plastics through regulation and education.
- The *Container Deposit Scheme (Containers for Change)*, which incentivises recycling through a refund system.

- The Waste Levy Framework, designed to encourage landfill diversion and support investment in recovery initiatives.
- The Local Government Waste Planning Requirements, which mandate the development of waste plans to support strategic alignment with the Waste Strategy 2030 (see **section 2.2.3**).

Waste activities are also regulated under the Environmental Protection Act 1986, which governs pollution control and licensing of facilities such as landfills. In combination with the WARR Act, it ensures waste services meet environmental standards and support broader sustainability goals.

Together, these instruments guide Western Australia's transition toward more sustainable waste practices and align with national and global policy directions.

Figure 2.3: Western Australia waste policy documents



2.2.3 WARR STRATEGY 2030

The *Waste Avoidance and Resource Recovery (WARR) Strategy 2030* provides the strategic framework for transitioning the state to a low-waste, circular economy. It is built around three core objectives:

- **Avoid** – Generate less waste
- **Recover** – Recover more value and resources from waste
- **Protect** – Protect the environment by managing waste responsibly

The strategy is supported by an action plan and underpinned by principles of shared responsibility, better practice, continuous improvement, and data-driven decision-making. Local governments are key to achieving the WARR Strategy's goals, particularly in managing municipal solid waste (MSW). Under the current strategy, the relevant targets include:

- 10% reduction in waste generation per capita by 2030.
- 70% material recovery rate for MSW by 2030.
- No more than 15% of MSW sent to landfill by 2030.
- Implementation of local government waste plans aligned with the WARR Strategy.

To support the Waste Strategy, local governments are required under section 40(4) of the *Waste Avoidance and Resource Recovery Act 2007* to prepare waste plans that demonstrate alignment with state objectives. This applies to all local governments in the Perth and Peel regions, as well as major regional centres, and aims to ensure consistent and coordinated waste service delivery across Western Australia.

The draft updates to the WARR Strategy 2025–2030, titled '*Beyond Waste 2030*', builds on the existing framework and introduce updated targets and five new strategic priorities. Updated MSW Targets include:

- 10% reduction in MSW generation per capita.
- 70% recycling rate in Perth and Peel.
- 60% recycling rate in major regional centres.

- 50% reduction in organic waste to landfill (from 2019–20 levels).
- No more than 15% of waste generated in Perth and Peel landfilled.
- Continued rollout of FOGO (Food Organics and Garden Organics) services in Perth, Peel, and major regional centres.
- Adoption of the 2030 litter reduction targets.
- Adoption of national circular economy metrics to measure avoidance and circularity.

The updated strategy also introduces five new strategic priorities: improving outcomes for regional and Aboriginal communities, increasing focus on waste avoidance, enhancing the management of high-impact materials, unlocking the economic potential of recycling, and strengthening emergency waste management and sector resilience. These updates reflect a stronger emphasis on regional equity, climate resilience, and economic opportunity, and will be supported by a new Action Plan. It is anticipated that the revised draft Waste Strategy and Action Plan will be released in the first quarter of the 2025-26 financial year, for a 28-day consultation period.

It is noted that the City of Karratha is not currently classified as a major regional centre under the definitions used in the *Waste Avoidance and Resource Recovery Strategy 2030* or its draft 2025 – 2030 update. As such, the City is not required to meet the specific material recovery targets set for Perth, Peel, or major regional centres, nor is it obligated to submit a local government waste plan to the Department of Water and Environmental Regulation (DWER).

While not mandatory for the City of Karratha at this stage, aligning its waste services and activities with the strategic outcomes and priorities of the WARR Strategy remains important. Doing so supports broader state objectives, positions the City for future funding and policy alignment, and ensures that local waste management practices contribute to long-term environmental and economic sustainability.

3 BASELINE WASTE DATA

3.1 POPULATION DATA

The City of Karratha encompasses the Karratha City urban centre and the town sites of Cossack, Dampier, Point Samson, Roebourne and Wickham. The population of the City of Karratha is shown in **Table 3.1**. The increase in population associated with tourism visitor nights has also been accounted for.

Table 3.1: City population data (Remplan, 2025)

Location	Permanent*	Tourism equivalent**	Total
Karratha (LGA)	24,716	3,803	28,519

*Population 2024: Remplan Data from City of Karratha

** Tourist data taken from Tourism WA, LGA Visitor Fact Sheet May 2023 – three-year average. Visitor nights divided by 365 to allow tourism numbers to be incorporated into population statistics.

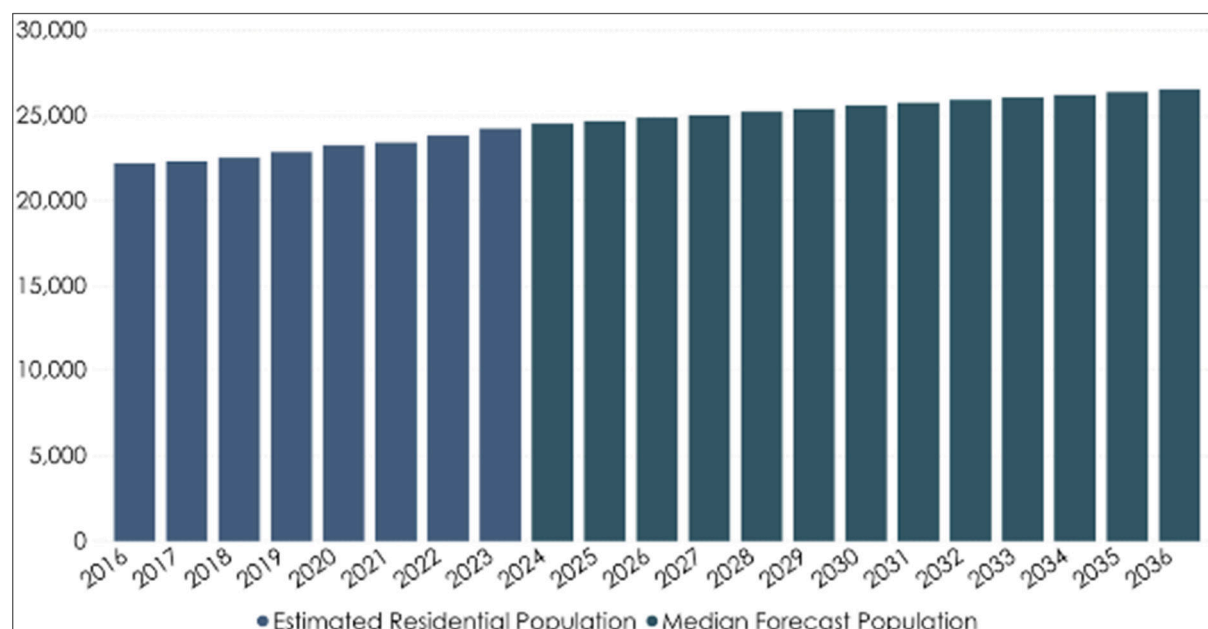
Population forecasts for 2025, based on Remplan data provided by the City, are presented for each locality within **Table 3.2**.

Table 3.2: City and town sites population (Remplan 2025 forecasts, 2025)

Area	Baynton	Dampier	Karratha (incl industrial)	Point Samson	Roebourne	Wickham	Stove Hill & Rural
Pop	4,992	1,461	14,213	255	1,060	2,218	710

According to the *Western Australia Tomorrow 12 Population Forecasts*, the population of the City of Karratha is projected to remain relatively stable, with an anticipated increase of 9.4% from 2023 to 2036 (Department of Planning, Lands and Heritage, 2025) (**Figure 3.1**).

Figure 3.1: Population growth and projections for Karratha (2016-2036)



3.1.1 HOUSEHOLDS

The ABS Census data shows that single-unit dwellings (SUDs) make up the vast majority of dwellings in the LGA, with the number of private dwellings in the area increasing from 6,325 in 2011 to 8,029 in 2021 (ABS, 2021).

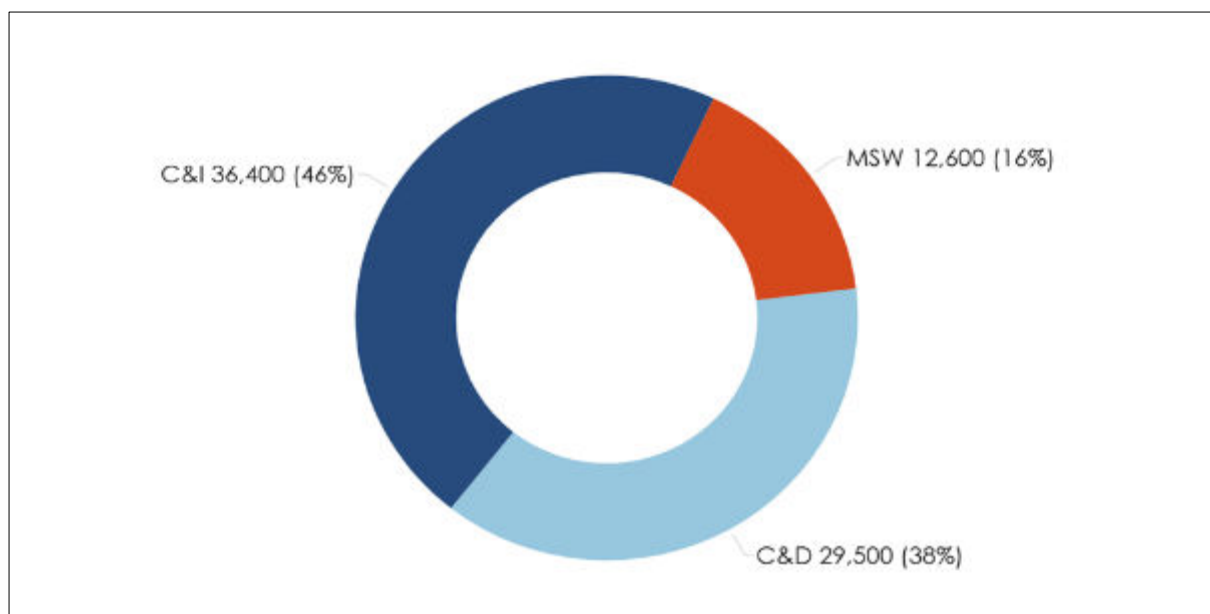
3.2 SOLID WASTE QUANTITIES

Waste data has been compiled into the following sector source categories:

- **Municipal Solid Waste (MSW)** – is primarily waste collected from households through kerbside waste and recycling collections. It includes biodegradable material, recyclable materials such as bottles, paper, cardboard and aluminium cans, and a wide range of non-degradable material including paint, appliances, old furniture and household lighting (National Waste Report, 2010). Municipal waste may include waste from small commercial premises or other similar activities where this is collected as part of the standard local government service (Waste Authority, 2019a).
- **Commercial and Industrial Waste (C&I)** – refers to waste generated by institutions and businesses, such as schools, restaurants, offices, government agencies and facilities, retail and wholesale businesses, and manufacturing industries. (Waste Authority, 2024b).
- **Construction and Demolition Waste (C&D)** – refers to waste generated from demolition, building activities, road and rail construction, maintenance, and land excavation related to construction (Waste Authority, 2024b).

The average annual quantity of solid waste that was managed by the City between the 2021/22 financial year and 2023/24 is 78,500 tonnes. This does not include liquid waste or any wastes that were generated and managed directly by industry with their own disposal sites. Over the three years the MSW, C&I and C&D waste streams comprised 16%, 46% and 38% respectively of the total waste quantities. The tonnages and breakdown by sector source is shown graphically in **Figure 3.2**.

Figure 3.2: Average percentage breakdown by sector source (2021/22 – 2023/24)



3.2.1 MUNICIPAL SOLID WASTE

Waste generated from the domestic sector of the community comprises, on average, approximately 16% of the total waste produced within the City as shown in **Figure 3.2**. The majority

of this waste is sourced from the City's kerbside waste and recycling collection services (59%), followed by waste dropped-off at the 7 Mile Waste Disposal Facility (32%), with a small additional amount coming from Wickham Transfer Station and from the pre-cyclone green waste collection (**Figure 3.3**). Kerbside residual waste constitutes over half of the MSW stream (52%), followed by dropped off mixed domestic waste, green waste, and kerbside recycling (22%, 10% and 7% respectively) (**Figure 3.4**).

Figure 3.3: Composition of MSW by source (2021/22 – 2023/24)

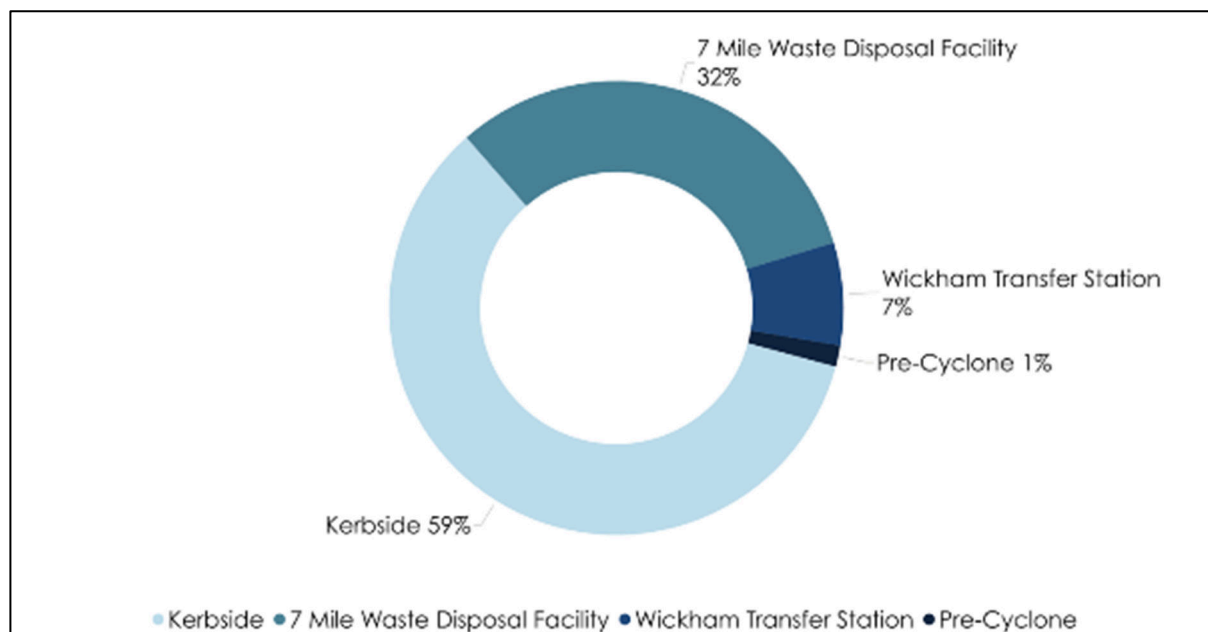
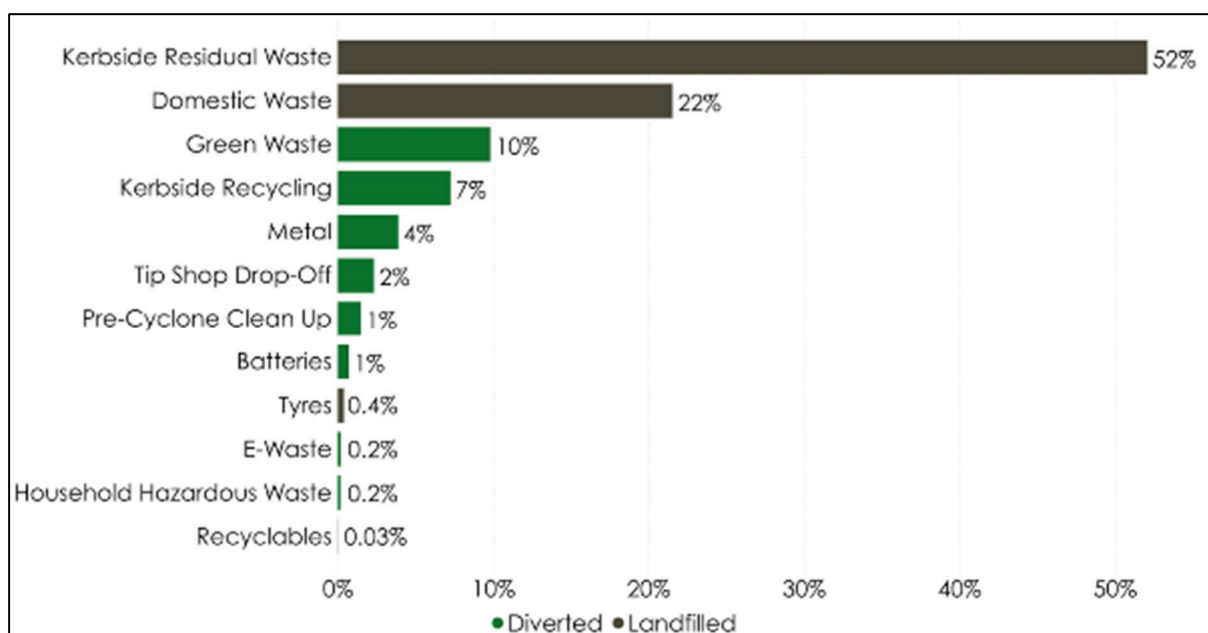


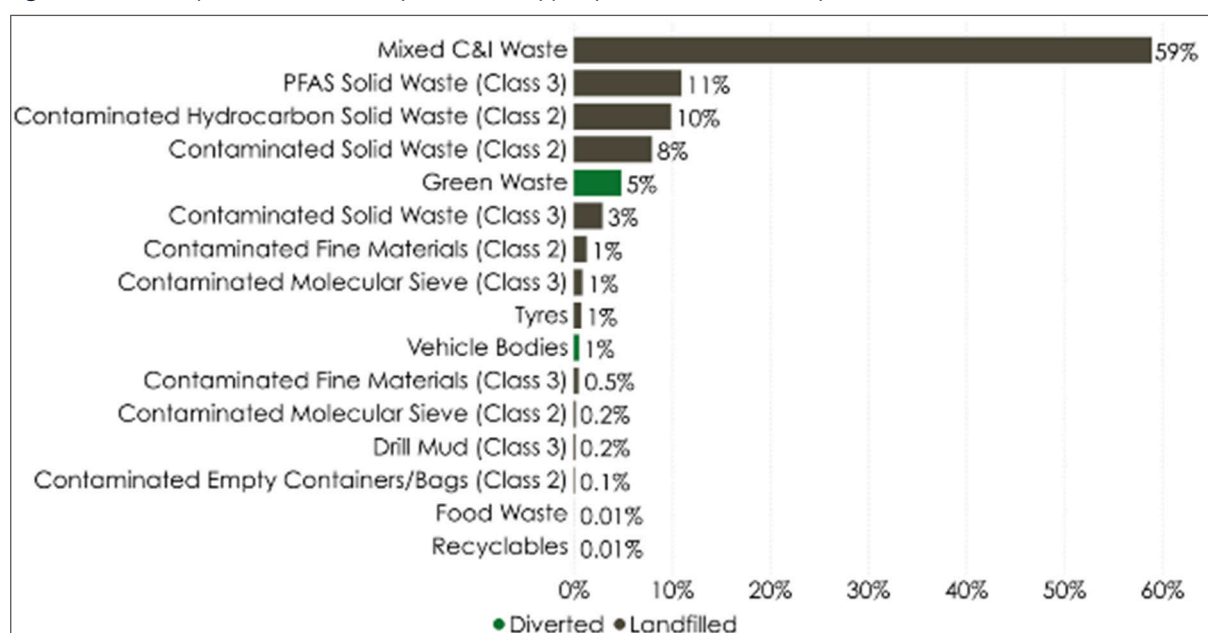
Figure 3.4: Composition of MSW by material type (2021/22 – 2023/24)



3.2.2 C&I WASTE

Waste generated from the commercial and industrial (C&I) sector comprises approximately 46% of the total waste handled by the City. **Figure 3.5** provides a breakdown of the City's average annual C&I waste stream composition by material type (2021/22 – 2023/24).

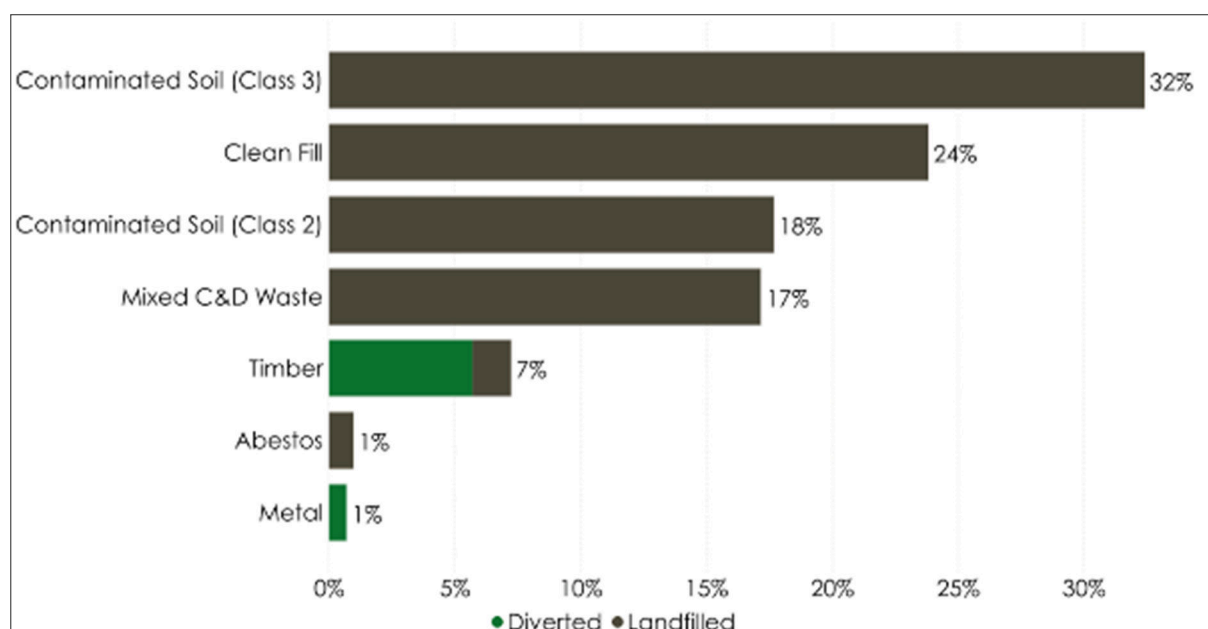
Figure 3.5: Composition of C&I by material type (2021/22 – 2023/24)



3.2.3 C&D WASTE

Waste generated from the construction and demolition sector (C&D) comprises approximately 38% of the total waste handled by the City. **Figure 3.6** provides a breakdown of the City's average annual C&D waste stream composition by material type (2021/22 – 2023/24).

Figure 3.6: Composition of C&D by material type (2021/22 – 2023/24)



3.3 WASTE GENERATION RATES

The City's waste generation rates have been benchmarked against the state's performance outcomes as listed in the *Waste Authority Annual Report 2023-24* and the Australian rates from the *National Waste and Resource Recovery Reporting* (Waste Authority, 2024a and DCCEEW,

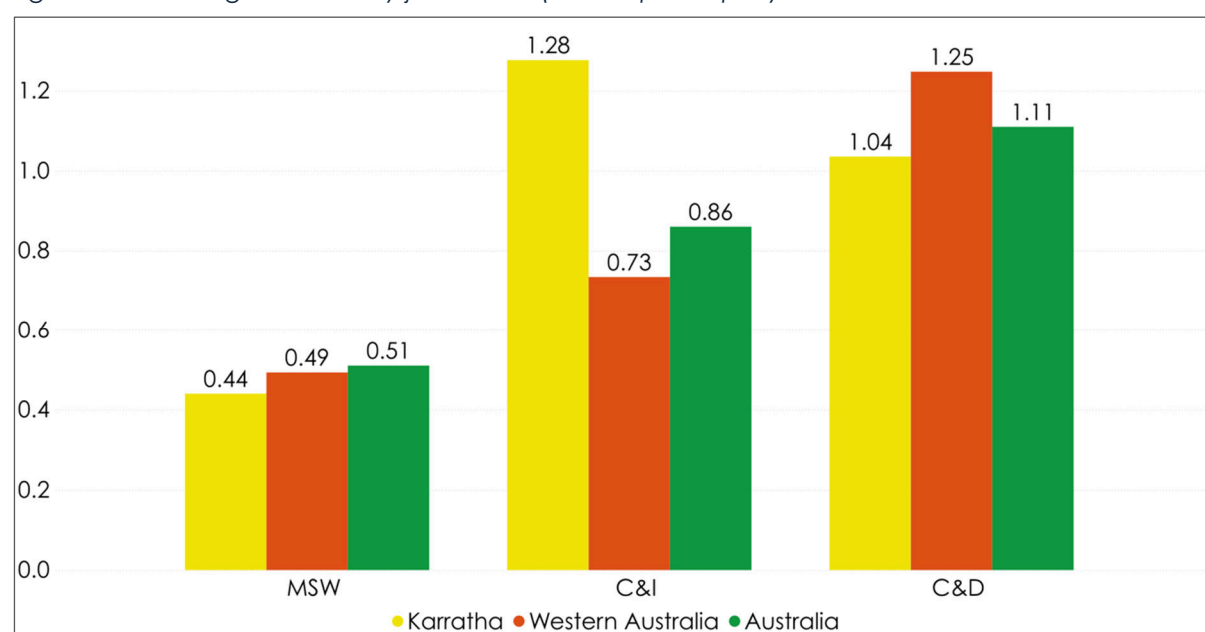
2024)(Table 3.3 and Figure 3.7). These rates have been calculated using the three-year average waste data from the City, divided by the LGA population, including visitor numbers.

The benchmarking indicates that the total waste generated per capita in the City is approximately 300kg above the state and national averages at 2.76 tonnes per capita. MSW and C&D generation is slightly below both WA and Australian averages. The rate of C&I waste generated is significantly higher than both WA and Australian averages, due to the significant mining and resources operations within the area.

Table 3.3: Waste generation values of the City compared to state and national averages (2021/22 – 2023/24 three-year average)

Waste stream	City of Karratha tonnes per capita	City of Karratha % breakdown	WA tonnes per capita	WA % breakdown	Australia tonnes per capita	Australia % breakdown
MSW	0.44	16%	0.49	20%	0.51	20%
C&I	1.28	46%	0.73	29%	0.86	35%
C&D	1.04	38%	1.25	51%	1.11	45%
Total	2.76	100%	2.47	100%	2.48	100%

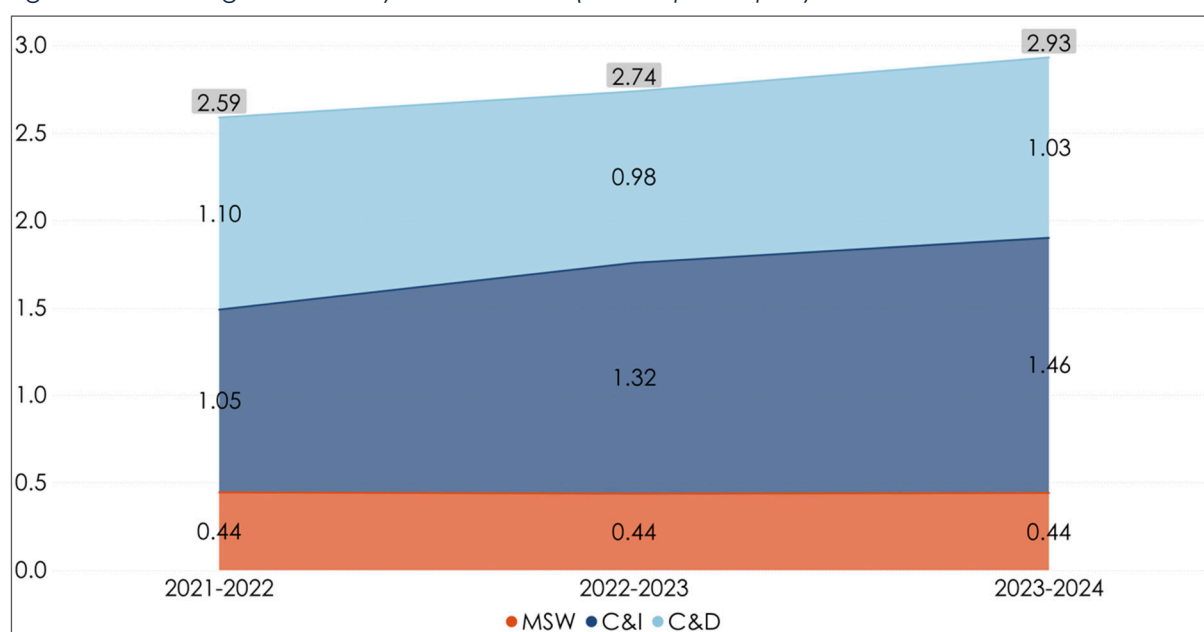
Figure 3.7: Waste generation by jurisdiction (tonnes per capita)¹



Over the last three years, per capita waste generation quantities varied by sector. MSW remains steady at around 0.44 tonnes, C&D waste decreased by 6%, while C&I waste increased 39% from 1.05 to 1.46 tonnes per capita, as shown in Figure 3.8.

¹ Karratha per capita rates based on a three year average (2021/22 – 2023/24), Western Australia and Australia rates are sourced from the National WARR Reporting 2022/23 (DCCEE, 2024)

Figure 3.8: Waste generation by sector source (tonnes per capita)

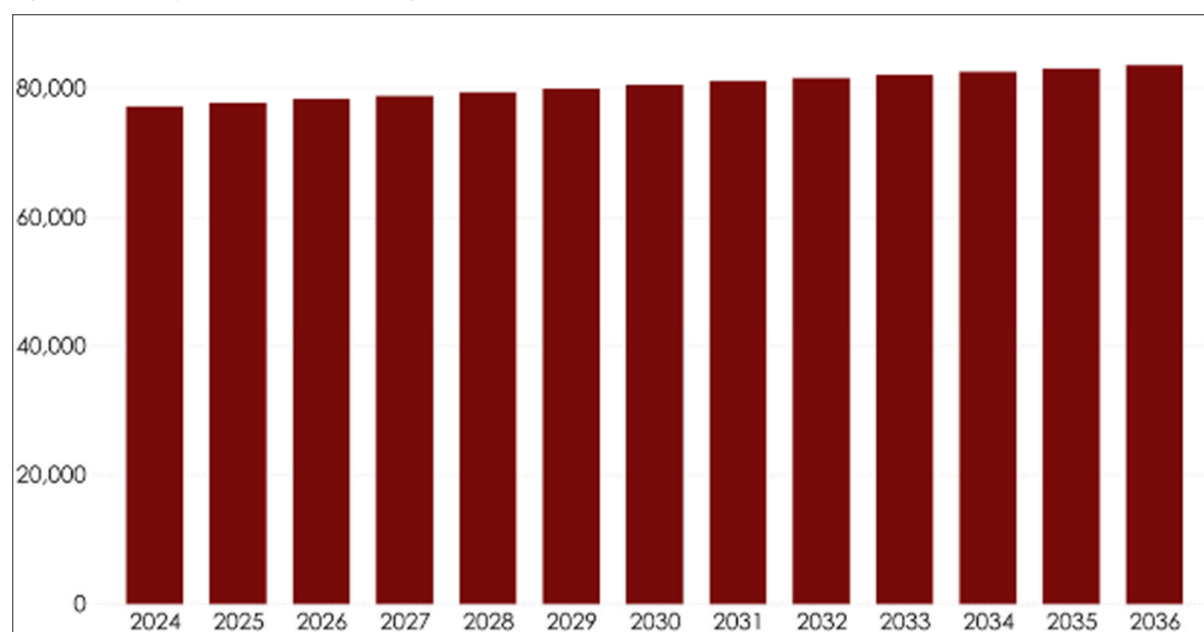


3.3.1 WASTE GENERATION PROJECTIONS

Waste generation projections have been made for the next 10 years based on the population growth data provided by the *Western Australia Tomorrow 12 Population Forecasts* (Department of Planning, Lands and Heritage, 2025). A median growth scenario has been adopted, and it has been assumed that waste generation per capita will remain constant.

The projections show approximately 84,900 tonnes per annum of waste being generated by 2036. This is an increase of 8% or 6,400 tonnes from the 78,500 tonnes per annum 3- year average for 2021/22 to 2023/24. **Figure 3.9** provides the total annual waste generation projection for the next 10 years until 2036.

Figure 3.9: Project annual waste generation by year (tonnes)



3.4 RESOURCE RECOVERY

The City provides a variety of recycling options for the community as outlined in **Section 4**. The average amount of waste diverted from landfill in the 2021/22 to 2023/24 financial years was 7,100 tonnes across all waste streams, equating to an overall recycling rate of 9%. As shown in **Table 3.4**, MSW recycling performance is comparatively higher at 26%, while the C&I and C&D sectors have recovery rates of 5% and 6%, respectively.

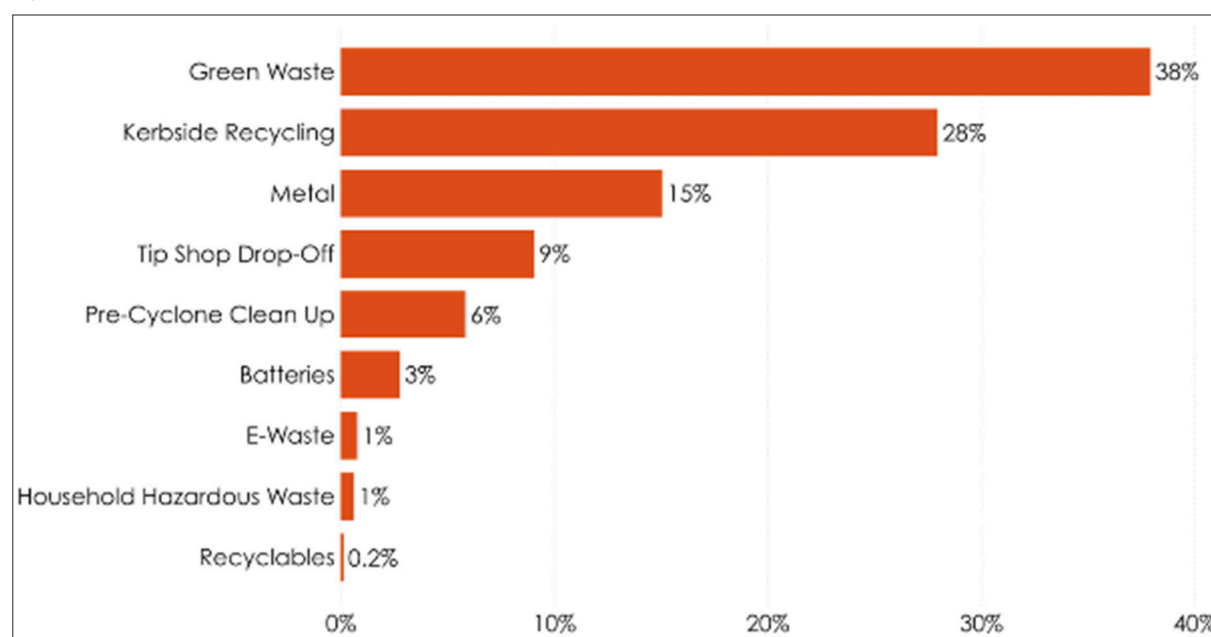
Table 3.4: Average tonnes, percentage and per capita values of waste recovered (2021/22 – 2023/24)

	MSW	C&I	C&D	Total
Average tonnes of waste recovered	3,300	1,900	1,900	7,100
Average percentage diverted from landfill	26%	5%	6%	9%
Average per capita diversion from landfill (kg/person)	116kg	66kg	66kg	248kg

3.4.1 MSW RECOVERY

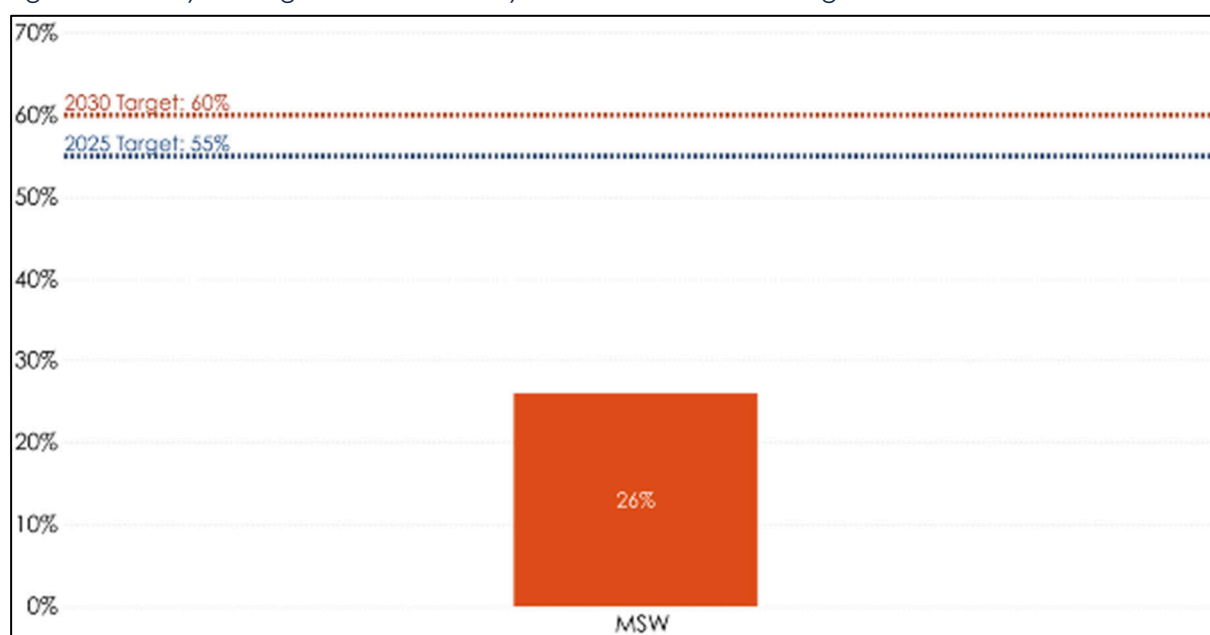
According to data provided by the City, the average amount of municipal solid waste (MSW) diverted from landfill for recycling and reuse over three years is 3,300 tonnes, corresponding to an average recycling rate of 26%. Most recycled materials were source-separated items either delivered directly to the facility or collected through kerbside recycling programs (**Figure 3.10**).

Figure 3.10: Composition of recycled MSW by material type (2021/22 – 2023/24)



The WARR Strategy 2030 includes a target to increase MSW recycling rate to 70% by 2030 in Perth and Peel regions and 60% by 2030 for major regional centres. **Figure 3.11** shows the City's resource recovery rate compared to the WARR Strategy targets set for major regional centres. It should be noted that the City of Karratha is not classified as a major regional centre within the WARR Strategy, and therefore these targets are considered aspirational for the City.

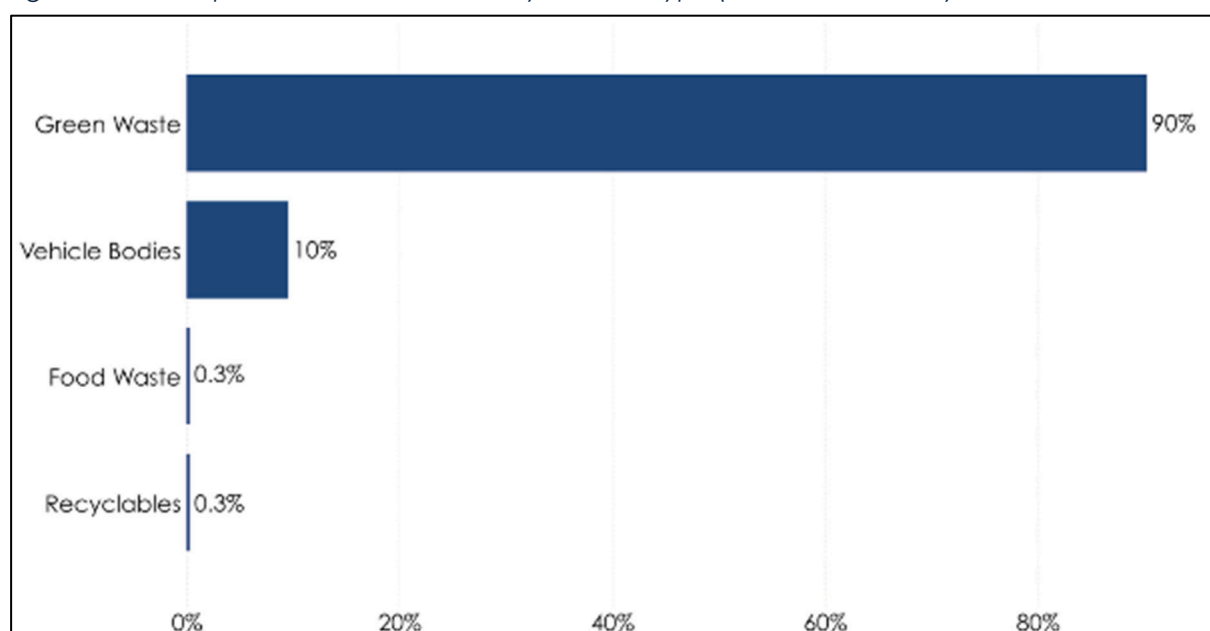
Figure 3.11: City average annual recovery rate and WARR 2030 targets



3.4.2 C&I WASTE RECOVERY

An average of approximately 1,900 tonnes per annum of C&I material was diverted from landfill for recycling and reuse between 2021/22 – 2023/24. This represents an average recycling rate of 5% for the C&I waste stream managed by the City. Almost all the material recovered from the C&I stream is green waste at 90% (**Figure 3.12**). The draft WARR Strategy 2030 sets targets for industry for recycling of C&I streams to 80% by 2030. These targets are for the C&I sector and do not apply to the City.

Figure 3.12: Composition of diverted C&I by material type (2021/22 – 2023/24)



3.4.3 C&D WASTE RECOVERY

An average of approximately 1,900 tonnes per annum of C&D material was diverted from landfill for recycling and reuse between 2021/22 – 2023/24. This represents an average recycling rate of 6% for the C&D waste stream managed by the City. All recovery is from timber (89%) and metal (11%).

The draft WARR Strategy 2030 sets targets for industry for recycling of C&D streams to 80% by 2030. These targets are for the C&D sector and do not apply to the City.

4 EXISTING SERVICES, INFRASTRUCTURE AND ACTIVITY

As part of the project methodology, a baseline assessment of the City's waste management services, infrastructure, and supporting activities was undertaken. This assessment was conducted against better practice benchmarks and state policy objectives to identify current performance, service gaps, and opportunities for improvement. The findings from this assessment have directly informed the development of strategic actions contained within **Section 6**. A summary of the assessment is provided in the sections that follow, with the full baseline report included in **Appendix A**.

4.1 WASTE INFRASTRUCTURE

The City of Karratha operates two key waste infrastructure sites: the Seven Mile Waste Disposal Facility (SMWDF) and the Wickham Transfer Station (WTS).

The SMWDF is the City's primary waste management site, licensed to accept a wide range of waste types including putrescible, inert, hazardous, and liquid wastes. It features a Class III landfill, transfer station, reuse shop, stockpile areas, wastewater treatment ponds and a landfill gas collection and flaring system. The site is licensed to accept up to 150,000 tonnes of putrescible waste annually and has approval for 12 landfill cells, with Cells 1 and 2 currently active. The site has been in operation since 1992 and is expected to meet the City's disposal needs until at least 2045, with potential for further expansion. While a Landfill Closure Management Plan (LCMP) has been developed, the site lacks a comprehensive masterplan to guide long-term development and integration of new infrastructure.

A key issue identified is the presence of significant legacy stockpiles of tyres, green waste, and concrete. These stockpiles have accumulated due to a combination of high transport costs to processing facilities in Perth, the absence of local processing infrastructure, and a lack of viable end markets. Tyres are often buried due to the cost of transport, posing fire and environmental risks. Green waste is routinely shredded but remains stockpiled due to limited demand and contamination concerns. An organics processing trial conducted in 2020 was unsuccessful due to contamination, regulatory constraints, and high operational costs. Concrete stockpiles persist despite the availability of crushing equipment in the region, as the current licence does not permit processing and there are no local buyers for recycled aggregate.

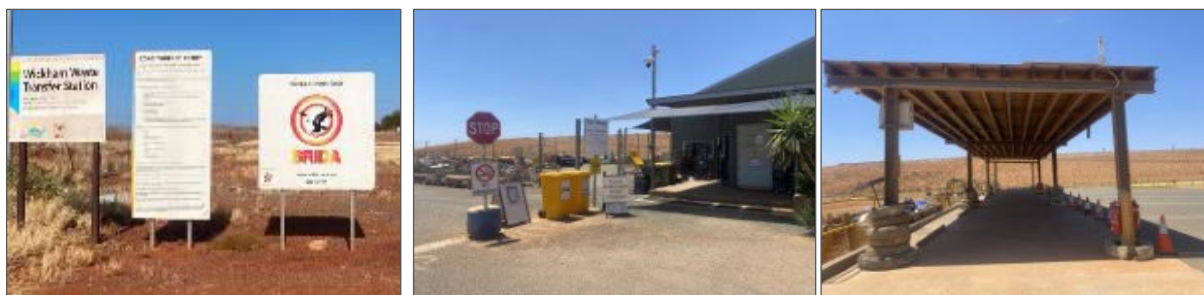
The Seven Mile Waste Disposal Facility has evolved to include reuse, recycling, and resource recovery functions. However, its current name reinforces outdated perceptions of a landfill-only operation and does not reflect the City's strategic direction.

The WTS services the eastern corridor communities including Roebourne, Wickham and Point Samson and is operated under contract. It accepts a broad range of domestic waste and recyclables, which are consolidated and transported to SMWDF. The facility is open daily and free to use, but it faces high servicing costs, and compliance issues related to waste storage and reporting.

Planned upgrades include the construction of two new landfill cells at SMWDF and minor improvements to the WTS. Ongoing alignment with evolving better practice guidelines and strategic development of infrastructure will be essential to ensure the City's waste facilities remain compliant, efficient, and capable of supporting long-term resource recovery objectives.

Key considerations for the strategy include resolving legacy stockpiles, improving compliance and efficiency at the WTS, planning for long term disposal capacity, and developing a masterplan for SMWDF to guide future investment and ensure alignment with better practice standards.

Figure 4.1: City waste infrastructure



4.2 WASTE SERVICES

The City of Karratha provides a range of waste services to its residents and businesses that include weekly kerbside waste and fortnightly recycling collections, an annual pre-cyclone green waste collection, and access to two staffed drop-off facilities at the SMWDF and the WTS.

The City kerbside service reaches all residential rateable properties, but issues such as inconsistent bin lid colours and high contamination rates in recycling (up to 36%) highlight the need for improved bin standardisation and community education. Food and organic waste generated within the City is currently sent to landfill due to no organics processing facility within the region. The pre cyclone green waste collection service has low participation, with only an estimated 30% of households engaging, and the resulting material is stockpiled due to a lack of viable end markets.

The SMWDF offers extensive drop-off options for a wide range of waste types, including household hazardous waste, e-waste, tyres, and scrap metal, and features a popular Reuse Shop. However, legacy stockpiles of tyres, concrete, IBCs and green waste present operational challenges.

Litter and illegal dumping are managed through public bin servicing and two regional litter contracts, but illegal dumping remains a persistent issue, particularly in remote areas, despite free disposal options for residents. The City's 'Bucks for Bags' program incentivises community clean-ups and has been well received.

Figure 4.2: Bucks for Bags Program images (City of Karratha Facebook)



Community feedback, particularly from Roebourne, highlights persistent issues with litter, illegal dumping, and perceived inequity in service delivery. Residents report damaged or missing bins, inconsistent collection, lack of bulk waste support, and low confidence in recycling knowledge. These concerns are compounded by reports of poor street cleanliness and a lack of culturally appropriate education materials.

Waste services for Aboriginal communities include weekly kerbside collection in Cheeditha and fee waivers for access to WTS for other communities. While these services provide basic coverage, there is scope to improve infrastructure and engagement to ensure equitable service delivery.

4.3 SUPPORTING WASTE INFORMATION AND ACTIVITIES

The City of Karratha's waste management framework is supported by a range of strategic planning instruments, policies, education initiatives, data systems, and regional considerations. Waste planning is integrated into the City's broader strategic framework through its *Council Plan* (CP). The CP includes objectives related to waste minimisation, sustainability, and environmental protection, and outlines measures for increasing diversion from landfill and reducing greenhouse gas emissions. The City's *Environmental Sustainability Strategy* and *Emissions Reduction Plan* also identifies waste as a key focus area, with actions aligned to the *Waste Avoidance and Resource Recovery Strategy 2030*.

Despite this strategic alignment, there are opportunities to further embed waste management into the City's planning instruments and regulatory framework. Strengthening the integration of waste-related considerations into local planning schemes, such as defining waste-related land uses and identifying appropriate buffers around waste facilities, will help safeguard future infrastructure development. Additionally, adopting waste-specific local laws under the WARR Act would enhance the City's ability to manage local waste issues more effectively.

Behaviour change programs are recognised as essential to improving waste outcomes, however delivery has been constrained by limited internal resources (at the time of writing). The City has recently transitioned waste education responsibilities to a technical officer and is working with its contractor, Cleanaway, to provide community resources such as online learning tools and school programs. A recycling audit is planned to inform future education efforts and the development of a waste education plan in collaboration with the City's Communications team.

The City maintains robust data systems through its weighbridge and gatehouse software, providing high-confidence waste data. Whole-of-life cost assessments for SMWDF operations have not been recently undertaken, which limits the City's ability to evaluate the financial viability of recovery initiatives. The City's waste operations are well-resourced, with a projected \$30 million waste reserve and a significant operating surplus. Free residential disposal may be undermining waste avoidance behaviours.

Regional collaboration among Pilbara local governments is limited, despite previous studies identifying shared infrastructure needs and opportunities. Past initiatives have proposed regional approaches to waste management, inert processing, and tyre recycling, but progress has been constrained by the absence of a coordinating agency. These findings suggest that renewed regional coordination could support infrastructure development, improve economies of scale, and enhance waste outcomes across the Pilbara, provided it is supported by a dedicated, funded coordinator. Without this role, regional projects risk being deprioritised, as local government staff are already stretched managing day-to-day operations and cannot absorb additional strategic responsibilities without resourcing.

5 COMMUNITY CONSULTATION

To inform the development of the Strategy, ASK undertook a multi-method consultation process between February and April 2025. The purpose of the consultation was to collect information on community attitudes, service usage, and industry challenges related to waste and recycling to guide the Strategy's actions.

The consultation was guided by a project *Community Consultation Plan* and the methodology included:

- An online community survey was conducted from 11 February to 11 March 2025 via the City's What We Make It engagement platform. The survey received 81 responses, representing approximately 0.4% of the City's population. While the sample size limits statistical validity and representativeness, the results provide indicative insights into community views and priorities.
- Place-based workshops, including a public session at the City Library and a targeted session with the Environmental Sustainability Advisory Group (ESAG) on 2 April 2025. A planned workshop in Wickham was cancelled due to low registrations.
- Stakeholder interviews held from 1–3 April 2025 with representatives from industry, government, and community organisations, including Rio Tinto, Chevron, Cleanaway, North West Alliance, and the Pilbara Development Commission.

Community insights showed:

- Strong support for improved waste management: 84% of survey respondents rated better waste management as important or very important.
- Mixed views on recycling access: Many residents felt recycling opportunities were limited, especially in public spaces and town centres.
- Low confidence in recycling knowledge: 58% of respondents reported moderate to low confidence in knowing what can be recycled, aligning with high contamination rates in kerbside recycling.
- General satisfaction with core services: Weekly kerbside collection, the 7 Mile Tip Shop, and drop-off facilities were well received.
- Underutilisation of hazardous waste services: Many residents were unaware of or did not use the HHW disposal point, raising concerns about improper disposal.
- Tip Shop success: The Tip Shop was highly valued, with suggestions to expand its role through repair cafés and infrastructure upgrades.
- Education and engagement gaps: There was strong demand for more education, especially for children and transient populations.
- Top priorities for future initiatives: Reducing landfill, improving recycling rates, and exploring composting options were most supported.

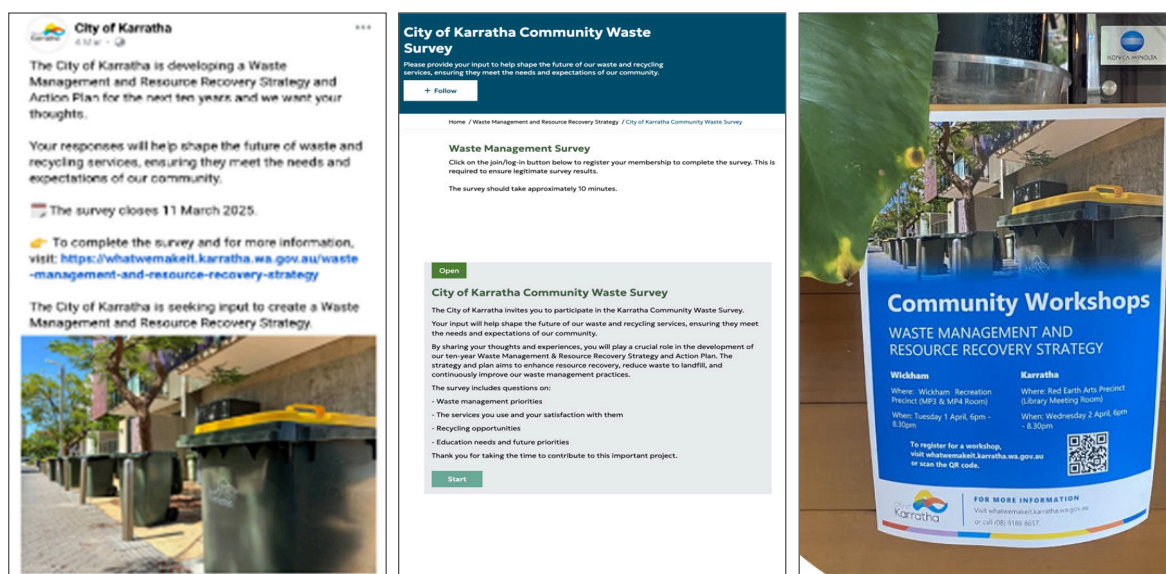
Industry insights included:

- Transport inefficiencies: Long distances to processing facilities (often in Perth) increase costs and emissions.
- Lack of end markets: Materials like tyres, concrete, and organics are often stockpiled or landfilled due to limited local reuse options.
- Problem waste streams: Tyres, e-waste, bulka bags, IBCs, and organics were frequently cited as difficult to manage.

- Support for regional collaboration: Stakeholders advocated for a coordinated regional approach to improve economies of scale and infrastructure investment.
- Policy and regulatory barriers: Existing frameworks, especially in the mining sector, lack incentives for resource recovery.
- Disconnect between decarbonisation and recycling: Sustainability efforts focus on emissions reduction, with recycling often overlooked.
- Workforce challenges: Labour shortages and harsh working conditions hinder the development of local recycling operations.

A copy of the consultation summary report is provided in **Appendix B**.

Figure 5.1: Consultation promotion



6 ACTION PLAN

This Action Plan outlines the strategic initiatives required to align the City's waste management practices with the outcomes of the Waste Avoidance and Resource Recovery (WARR) Strategy 2030, the Department of Water and Environmental Regulation (DWER) Waste Plan benchmarks, and the City's own waste objectives.

To ensure consistency with the City's strategic planning framework, the Action Plan is organised by goal, with each goal supported by specific objectives and corresponding actions. This format also supports future reporting and tracking of progress.

Each objective is presented using the following structure:

- Findings: Key insights identified during the development of the Strategy.
- Issues: Challenges or implications arising from the findings.
- Actions: Recommended actions to address issues and leverage opportunities.
- Cost: Estimated cost to implement the action.
- Priority: Prioritised as either **short** (one - two years), **medium** (three – five years) or **long term** (five years +).

The summary below outlines the eight strategic goals and associated objectives that form the foundation of the Action Plan. Detailed tables in the following sections present the recommended actions, estimated costs, and implementation priorities for each objective.

Goal 1: Waste Infrastructure and Operations

Ensure the City's waste infrastructure and operations are environmentally responsible, compliant, and aligned with better practice standards to support long-term waste management and resource recovery. The objectives include:

- Establish better practice infrastructure.
- Resolve legacy stockpile issues.
- Review WTS operations.
- Develop a masterplan for the SMWDF.
- Renaming of the SMWDF to reflect a resource recovery focus.
- Plan for long term disposal capacity.

Goal 2: Waste Services

Deliver efficient, accessible and inclusive waste services that support waste avoidance, enhance material recovery, and safeguard public health and the environment. The objectives include:

- Assess future resource recovery options.
- Assess the feasibility of organics recovery.
- Improve kerbside service provision.
- Enhance services in the eastern corridor.
- Increase the use of hazardous waste disposal services.
- Investigate the development of a recycling precinct.
- Expand public place recycling infrastructure.
- Upgrade bin infrastructure and access.

- Review the pre-cyclone greenwaste collection service.

Goal 3: Data, Information and Economics

Establish a robust data and information framework to support evidence-based decision making and enhance the effectiveness of the City's waste management planning. The objectives include:

- Conduct regular kerbside recycling audits.
- Calculate whole of life costs.
- Assess internal resource capacity.

Goal 4: Litter and Illegal Dumping

Move towards zero illegal dumping and reduce litter by 2035. The objectives include:

- Develop a Litter and Illegal Dumping Strategy.

Goal 5: Policy and Procurement

Strengthen governance and planning processes to enable strategic waste outcomes. The objectives include:

- Adopt waste local laws.
- Align the *Council Plan* with the *Waste Strategy*.
- Integrate waste related actions into the City's *Emissions Reduction Plan*.
- Embed waste management into local planning instruments.

Goal 6: Behaviour Change

Empower the community to reduce waste and improve recycling through sustained education and engagement. The objectives include:

- Strengthen waste education and behaviour change programs.

Goal 7: Aboriginal Communities

Ensure waste services and infrastructure meet the needs of Aboriginal communities. The objectives include:

- Improve services and infrastructure for Aboriginal communities.

Goal 8: Regional Efficiencies

Advance regional collaboration to improve waste outcomes and infrastructure investment. The objectives include:

- Establish a Pilbara region officers advisory group.
- Facilitate the formation of a regional waste management alliance.
- Advocate for regulatory reform to improve waste outcomes in the mining sector.

6.1 GOAL 1: WASTE INFRASTRUCTURE AND OPERATIONS

6.1.1 ESTABLISH BETTER PRACTICE INFRASTRUCTURE

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>There are infrastructure upgrades that will require capital works in the next five years, including:</p> <ul style="list-style-type: none"> Progressive capping of cells 1 and 2 Construction of landfill cells 3 & 4 Upgrades to WTS Site assets (infrastructure) will need annual maintenance and renewal works over the life of the plan. <p>Additionally the City is developing an emissions reduction Plan to support climate goals. Draft actions within the Plan recommend feasibility assessments for advanced waste-to-energy (WTE) infrastructure and methane capture from closed landfill cells.</p> <p>The Waste Strategy 2030 requires all waste to be managed and/or disposed of using better practice approaches.</p> <p>The Waste Authority's better practice guidance for local government drop off services were released in 2022. The guidelines aim to support local governments in achieving the Waste Strategy's material recovery targets for municipal solid waste (MSW).</p> <p>Other infrastructure upgrades may arise as DWER's better practice documentation are released over the life of the Plan.</p> <p>The City has a strong solid waste reserve and generates significant income from gate fees.</p>	<p>Delayed capping increases environmental and operational risks. Cell 3 and 4 must be constructed before Cell 2 reaches capacity.</p> <p>Lack of alignment with evolving DWER better practice guidance may potentially limit the City's ability to meet recovery targets.</p> <p>Waste infrastructure which is not fully integrated into the City's Long-Term Financial Plan (LTFP) risks delays.</p> <p>Lack of integrated planning for emissions reduction infrastructure may delay implementation of innovative waste recovery infrastructure solutions.</p> <p>Methane emissions from closed landfill cells represent an opportunity for renewable energy generation.</p> <p>Regional collaboration and long-term financial planning are needed to support complex infrastructure like WTE facilities.</p>	<ol style="list-style-type: none"> Undertake a feasibility assessment to capture methane emissions from closed landfill cells for conversion into renewable energy. Benchmark existing services against the 2022 better practice drop off guidelines to identify gaps and opportunities for improvement. Maintain and deliver a phased capital works plan for infrastructure development and maintenance. Ensure asset development, maintenance and renewal works are incorporated into the City's LTFP, annual budgets and asset management plans. Assign clear responsibilities and timelines for each infrastructure upgrade project to ensure delivery and accountability. Regularly review waste infrastructure to ensure it aligns with DWER better practice guidance where practicable. Undertake a feasibility assessment for a regional advanced waste-to-energy facility to evaluate viability, costs, and potential partnerships. 	<p>Feasibility assessment \$30 - \$45K dependent on scope. Benchmarking, planning, and integration into financial and asset systems can be managed using existing staff resources and support from the City's finance and asset management teams.</p> <p>Specific funding will be required for capital works, which will need to be identified and prioritised through the Long-Term Financial Plan process.</p> <p>Capital costs are difficult to estimate at this stage, as they will depend on the scope and timing of individual infrastructure upgrades.</p> <p>Feasibility for regional waste to energy facility \$50,000 - \$100,000 dependent on scope.</p>

6.1.2 RESOLVE LEGACY STOCKPILE ISSUES

Priority: Short term

Findings	Issues	Action	Estimated Cost
Tyres Large volumes of used tyres are received and stockpiled or buried at SMWDF. A local business has expressed interest in a joint venture for tyre shredding and export. A voluntary stewardship scheme exists but it does not cover transport costs. Used tyre disposal across the region is an issue, with tyres being buried due to high costs of transport.	Stockpiling and landfill disposal of used tyres poses fire, environmental, and health risks. Tyres also consume large amounts of landfill space and are costly to manage due to their durability and volume. A voluntary tyre stewardship scheme that excludes collection and transport costs risks low participation, especially in remote areas, shifting financial burdens for disposal to local governments or consumers, ultimately undermining the scheme's effectiveness. The current resource levels within the City restrict the potential to move this proposal forward.	<ol style="list-style-type: none"> Undertake a feasibility and cost-benefit analysis of tyre shredding and transport options, including: <ul style="list-style-type: none"> City-led shredding and transport to Perth for recycling A joint venture for on-site shredding and export Advocate for a national mandatory tyre stewardship scheme that includes funding for collection and transport costs. 	A feasibility assessment will likely require external consultancy. Estimated cost \$20,000 - \$35,000 depending on number of options and depth of analysis required. The costs associated with advocacy can be delivered internally with additional time required for preparing submissions, providing responses, and offering feedback as needed.
Greenwaste The City receives significant amounts of greenwaste which is routinely shredded as required. Large stockpiles have accumulated as there is no demand for the material. An organics processing trial conducted by the City in 2020 showed limited viability for organics processing. There are no organics processors within the Pilbara region.	Stockpiling without end markets is unsustainable. Landfilling green waste contributes significantly more to greenhouse gas emissions than controlled stockpile burning, as anaerobic decomposition in landfills produces methane, with a warming potential that is 28 times more potent than carbon dioxide ² , whereas burning, releases primarily carbon dioxide with lower long-term climate impact. Burning is permitted under the licence. If organics processing was to prove feasible in the region, uncontaminated greenwaste collected by the City would form an important feed stock.	<ol style="list-style-type: none"> Undertake a supply chain and market assessment for shredded greenwaste /mulch to assess the financial viability of continuing to stockpile greenwaste. If no viable end market exists for greenwaste, consider controlled burning. Burning will have less environmental impact than landfill disposal due to methane emissions associated with landfilling. 	A supply chain assessment will likely require external consultancy. Estimated cost \$20,000 - \$35,000 depending on scope. Controlled burning could be delivered using internal resources, though it would require additional staff time for preparation, execution, and post-burn cleanup activities.

² Australian Government Clean Energy Regulator - <https://cer.gov.au>

Priority: Medium term

<p>Concrete</p> <p>Significant stockpile of C&D material exists at the SMWDF.</p> <p>The City is not concerned with asbestos contamination due to the lack of asbestos in the town generally and stringent gatehouse procedures.</p> <p>Concrete can be crushed to produce a recycled concrete aggregate (RCA) for use in civil infrastructure.</p> <p>The EPL does not permit crushing. The City has appropriate machinery on site to crush material if required. There are also local C&D recyclers available.</p> <p>There are no end markets for recycled concrete material within the region.</p> <p>Concrete is a major contributor to global warming, primarily due to the substantial carbon emissions generated during cement production.</p>	<p>Recycled concrete aggregate (RCA) offers several practical applications for civil construction applications, including:</p> <ul style="list-style-type: none"> • Internal applications at the landfill • Road base and subbase layers • Concrete pavement • Non-structural and structural concrete (up to 50 MPa) • General fill and embankments <p>There is emerging research³ and interest in using Recycled Concrete Aggregate (RCA) in landfill liner and cover systems, although it is not yet a widespread or standard practice.</p>	<ol style="list-style-type: none"> 1. Investigate potential applications for crushed concrete material within the SMWDF. 2. Undertake a cost assessment to estimate the operational expenses associated with processing existing stockpiles. 3. Determine viability to proceed with on site crushing based on Actions 1 and 2. 4. If decision to process on site, seek Licence Amendment from DWER to allow on site processing. 5. Monitor emerging research on RCA use in landfill systems. 	<p>These actions can be achieved using internal resourcing.</p> <p>Additional time will be needed for investigation, cost assessment and preparing the licence amendment application.</p> <p>Alternatively, this could be undertaken by an external consultant. Estimated cost \$10,000 - \$20,000 dependent on scope.</p>
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³ Performance evaluation of recycled Concrete Aggregate as Drainage material in combination with geosynthetics for landfill cover systems (Syed and Mishra, Jan, 2025)

6.1.3 REVIEW WICKHAM TRANSFER STATION OPERATION

Priority: Short term

Findings	Issues	Recommendation	Estimated cost
<p>The WTS services approximately 3,200 residents and receives around 1,000 tonnes of waste per year.</p> <p>The facility is open every day of the year except Good Friday, Christmas Day and New Years day, and all residents in the area have access to weekly kerbside waste and recycling collection.</p> <p>The operational contract costs the City approximately \$580,000 annually.</p> <p>There is a lack of data on customer usage which limits informed decision-making.</p>	<p>The cost per tonne of waste managed at the facility is disproportionately high compared to other services.</p> <p>The facility's current operation may not represent best value for money or align with community usage patterns.</p>	<ol style="list-style-type: none"> 1. Undertake an Operational Review of the Facility to assess cost-effectiveness, usage patterns, and service needs to determine whether current operations are justified. The review should include an analysis of operational efficiency improvements such as using a compactor to increase bin density, introducing sealed hooklift bins to reduce odour and extend storage time, upgrading to a truck with trailer capacity to reduce trips, adjusting servicing frequency based on actual waste volumes and composition. 2. Improve Data Collection and Monitoring: Require contractors to record waste types, volumes, and customer numbers to inform future service planning. 3. Engage the Community: Consult with residents to understand service expectations and potential impacts of any changes. 	<p>Conducting an operational review will likely require external consultancy, with an estimated cost of \$25,000–\$40,000, depending on the depth of analysis and scope of recommendations.</p> <p>Improving data collection and monitoring can be managed internally, though some external support may be needed for system setup or integration. Estimated cost: \$5,000–\$10,000.</p> <p>Community engagement can be delivered by existing staff, with additional costs for outreach materials and events estimated at \$5,000–\$10,000.</p> <p>Total estimated cost for implementing all recommendations: \$35,000–\$60,000</p>
<p>The facility is serviced once per week, with one hooklift bin collected at a time due to the truck not having a trailer.</p> <p>The licence requires that putrescible waste not be stored for more than four days.</p> <p>Most waste received is not putrescible, as residents have weekly kerbside collection.</p> <p>It is unclear whether bins are being compacted or achieving optimal density.</p>	<p>Weekly servicing may not meet licence conditions and results in high transport costs.</p> <p>Inefficient bin utilisation increases the number of trips and associated emissions and costs.</p> <p>Lack of compaction or sealed containment may pose odour or compliance risks.</p>		

6.1.4 DEVELOP A MASTERPLAN FOR SEVEN MILE WASTE DISPOSAL FACILITY

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>The Seven Mile Waste Disposal Facility (SMWDF) is the City's primary waste management site and is expected to meet demand until at least 2044.</p> <p>The site currently lacks a formal masterplan, although a layout plan exists as part of the Landfill Closure Management Plan (LCMP).</p> <p>Implementation of the Waste Strategy may identify new infrastructure needs (e.g. organics processing, tyre shredding, recycling precinct) that will further expand the site's role.</p>	<p>Without a masterplan, future development may be ad hoc, leading to inefficiencies in site layout, traffic flow, and infrastructure investment.</p> <p>Opportunities to integrate new services (e.g. organics processing, tyre shredding, expanded reuse precinct) may be missed or poorly coordinated.</p> <p>Long-term planning is needed to ensure the site remains compliant, efficient, and aligned with community and environmental expectations.</p>	<ol style="list-style-type: none"> 1. Prepare a Comprehensive Site Masterplan: Develop a long-term masterplan for the SMWDF that integrates landfill cell development, transfer station upgrades and future expansion needs. 2. Ensure that future infrastructure needs identified through strategy implementation are incorporated into the site's masterplan and reflected in the facility's identity. 3. Link the masterplan to the City's Long-Term Financial Plan and capital works program to prioritise staged infrastructure upgrades. 	<p>Developing a comprehensive site masterplan will likely require external consultancy, given the complexity and scope of integrating future infrastructure needs.</p> <p>Estimated cost: \$30,000–\$50,000, depending on the depth of analysis, technical design requirements.</p>

6.1.5 RENAMING OF SMWDF TO REFLECT RESOURCE RECOVERY FOCUS

Priority: Medium term

Findings	Issues	Action	Estimated cost
<p>The facility has evolved beyond disposal to include reuse, recycling, and resource recovery functions.</p> <p>The current facility name emphasises disposal rather than recovery.</p>	<p>The existing name may reinforce outdated perceptions of the site as a landfill-only operation.</p> <p>It does not align with the City's strategic direction toward resource recovery and better practice waste management.</p>	<ol style="list-style-type: none"> 1. Consider renaming the facility to reflect its evolving role, e.g., "Karratha Regional Resource Recovery Facility" or similar. 2. Align the new name with the City's waste strategy goals and community education efforts to promote a shift in public perception. 	<p>This action will primarily involve internal resources, including updates to signage, digital platforms, and communication materials. Estimated cost: \$5,000–\$15,000, depending on the extent of branding updates and community engagement activities.</p>

6.1.6 PLAN FOR LONG TERM LANDFILL CAPACITY

Priority: Medium term			
Findings	Issues	Action	Estimated Cost
<p>The City of Karratha <i>Local Planning Strategy</i> does not identify a future waste facility site.</p> <p>The current site is considered by the City to provide adequate disposal options for the next 25+ years.</p> <p>The current <i>Landfill Closure Management Plan</i> (LCMP) for the SMWDF provides an approximate closure date of 2047 but does not include some usable areas which could extend the life of the site.</p>	<p>Extending landfill lifespan delays the need for costly and time-consuming development of a new site, which can take 10 - 15 years to plan, approve, and construct. It also allows the City to make the most of existing infrastructure investments.</p> <p>Developing a landfill closure plan with a long-term view of the final landform and capping design—rather than incrementally expanding the footprint as airspace becomes limited—is essential for optimising site performance and legacy outcomes.</p> <p>A planned final landform enables integrated engineering solutions for construction efficiencies. It also allows for progressive capping and rehabilitation, spreading costs over time and maximising airspace utilisation through efficient filling.</p>	<ol style="list-style-type: none"> 1. Revise the LCMP to include a long-term vision for the final landform and capping design, incorporating all usable areas of the site. 2. Develop a staged closure plan based on the revised LCMP that supports progressive capping, efficient filling patterns, and integrated gas/leachate management. 3. Use the revised LCMP to guide capital investment and ensure the City maximises the operational life and value of the existing site. 	<p>Revising the Landfill Closure Management Plan (LCMP) and developing a staged closure plan will require external consultancy, due to the technical nature of landfill engineering.</p> <p>Estimated cost: \$50,000–\$80,000, depending on the level of detail, site complexity, and integration design for gas/leachate management systems required.</p>

6.2 GOAL 2: WASTE SERVICES

6.2.1 ASSESS FUTURE RESOURCE RECOVERY OPTIONS

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>The City's baseline MSW recovery rate is below the 2025 & 2030 WA WARR Strategy targets.</p> <p>The City lacks a clear roadmap for achieving a 60% recovery rate by 2030.</p>	<p>Without a detailed analysis, investment in new services may be misaligned with actual recovery potential or cost-effectiveness.</p> <p>Without intervention, the City is unlikely to align with the state's recovery targets for major regional centres.</p>	<p>Undertake a comprehensive analysis of resource recovery options to identify the most effective and feasible pathways to achieving the 2030 recovery target.</p> <p>Include a cost-benefit analysis of each service option, considering environmental, social, and economic impacts. Evaluate options such as:</p> <ul style="list-style-type: none"> • FOGO (Food Organics and Garden Organics) feasibility (see action 6.2.2) • Centralised recycling brings centres or precincts • Other innovative or regionally appropriate solutions 	<p>A comprehensive analysis of future resource recovery options will require external consultancy, given the technical scope and need for cost-benefit evaluation across multiple service models. Estimated cost: \$40,000–\$65,000, depending on the number of options assessed, and depth of analysis.</p>

6.2.2 ASSESS THE FEASIBILITY OF ORGANICS RECOVERY

Priority: Medium term			
Findings	Issues	Action	Estimated cost
<p>Food and organic waste generated within the City is currently sent to landfill.</p> <p>A FOGO (Food Organics and Garden Organics) processing trial was conducted in 2020, but results indicated limited viability under current conditions.</p> <p>There are no organics processing facilities in the Pilbara region.</p> <p>Mining camps generate high volumes of food waste and have shown interest in organics recovery.</p> <p>City staff lack the capacity and technical expertise to manage a full scale FOGO operation.</p> <p>The City would prefer to act as a feedstock supplier rather than the facility operator.</p> <p>The City has scheduled the introduction of a community composting rebate scheme as part of the 25 - 26 budget. This program is aimed at incentivising household and community-scale composting.</p>	<p>National and State waste policy identifies organics – including food organics and garden organics (FOGO) – as a focus of actions and measurement to achieve recovery targets.</p> <p>Landfilling organics contributes significantly to greenhouse gas emissions and reduces landfill capacity.</p> <p>Without a processing facility, the City cannot implement a three-bin kerbside service, limiting recovery potential.</p> <p>Lack of regional collaboration and infrastructure presents challenges to the feasibility of organics recovery.</p>	<ol style="list-style-type: none"> 1. Implement the City Community Composting Rebate Program in 25-26. 2. Conduct a Feasibility Study to evaluate the viability of an organics processing facility within the City of Karratha region. The scope of the project could include: <ul style="list-style-type: none"> • Quantify organic waste generation across relevant sectors within the City (including mining, commercial, and municipal sources) • Evaluate transport logistics, contamination risks, and infrastructure needs • Identify potential end users to ensure market demand for compost • Engage with potential facility providers (e.g., Soilco or similar) to explore partnership opportunities recognising that the City may act as a feedstock supplier rather than the facility operator. 3. If feasible, use the findings of the feasibility study to develop a business case to inform investment, partnerships, and funding applications. 4. Should the project prove feasible, develop a long-term organics strategy to guide the City's role in organics recovery over the next 5 – 10 years and provide a framework for transitioning to better practice organics management. 	<p>Conducting an organics recovery feasibility study will require external consultancy, given the technical scope and lack of internal capacity. Estimated cost: \$40,000–\$65,000, depending on the depth of analysis, stakeholder engagement, and infrastructure assessment required.</p> <p>Additional costs may be incurred for developing a business case and long-term strategy if the project is deemed feasible. Estimated cost: \$50,000</p>

6.2.3 IMPROVE KERBSIDE SERVICE PROVISION

Priority: Short term

Findings	Issues	Action	Cost
Reduce Contamination in Kerbside Recycling Bins			
Kerbside bin audits and contractor feedback identified high contamination rates in recycling bins. Consultation revealed 58% of respondents reported low to moderate confidence in knowing what can be recycled. Community feedback highlighted a need for more education and clearer recycling guidance.	Contamination reduces the effectiveness of recycling efforts and increases processing costs. Improper sorting at the household level leads to rejected loads and undermines recovery targets. A lack of recycling knowledge contributes to improper sorting at the household level.	<ol style="list-style-type: none"> 1. Implement a Targeted Recycling Education Campaign focussing on common contaminants, correct sorting practices, and the environmental impact of contamination. Use visual guides, social media, and community events. 2. Consider introduction of Bin Tagging or Feedback Programs to help residents improve sorting habits. 3. Update and Distribute Clear Recycling Guidelines: Provide updated, easy-to-understand materials (e.g. fridge magnets, bin stickers, online tools) tailored to local recycling rules. 4. Monitor and Report Contamination Trends: Conduct regular bin audits to evaluate the effectiveness of interventions and adjust strategies as needed. 	<p>The City's Waste Education Officer can lead this campaign internally, with costs for materials and outreach estimated at \$10,000–\$25,000, depending on campaign scope and duration.</p> <p>The estimated cost for updating recycling guidelines is \$10,000 - \$20,000. This would typically cover design, printing, and distribution of updated materials, as well as integration into broader education campaigns.</p>

Priority: Medium term

Findings	Issues	Action	Cost
Standardise Kerbside Bin Colours			
The City's kerbside mobile garbage bin (MGB) lid colours are not uniform and do not comply with the Australian Standard (AS 4123.7-2006).	<p>Non-compliant bin colours (body and lid) can result in confusion and higher levels of contamination especially for short-term residents and holiday-makers.</p> <p>Inconsistent colours undermine public education efforts and reduce recovery performance.</p> <p>The Waste Authority encourages the use of AS 4123.7-2006 to achieve greater consistency in bin colours, which in turn will support more consistent messaging for resource recovery at both a state and local level.</p>	<ol style="list-style-type: none"> 1. Review options for standardisation of bin colours in line with AS 4123.7 -2006 as part of the kerbside bin collection service renewal or contract change due January 2027. 2. Support changes with clear community education to improve recognition and reduce contamination. 	<p>This action can be aligned with the next kerbside collection contract renewal in 2027. Costs will be absorbed into future procurement, but planning and community education may require \$10,000–\$20,000, depending on the scale of outreach.</p> <p>Bin upgrade costs will depend on breadth of changes required and can be offset through annual waste fees.</p>

Investigate Transition to Better Practice Kerbside Services			
<p>The City does not provide kerbside services in line with Waste Authority's better practice.</p> <p>A 2020 FOGO trial showed limited viability under current conditions.</p> <p>There are no organic processing facilities within the region.</p>	<p>The Waste Authority recognises three-bin kerbside services which collect FOGO as better practice.</p> <p>Without a FOGO processing facility, the City cannot implement a three-bin service, limiting recovery potential. A three-bin service that includes FOGO can achieve recovery rates of around 65 per cent.</p> <p>A lack of infrastructure and end markets limits the City's ability to adopt better practice services.</p>	<ol style="list-style-type: none"> 1. Apply the outcomes of the Organics Feasibility assessment and Resource Recovery Analysis (Action 6.2.2) to inform the design of a better practice kerbside system. 2. If organics processing proves feasible, plan for staged implementation of a three-bin service (including FOGO) as guided by organics processing infrastructure development timetables allow. 3. Develop and implement a community engagement and education plan to support the transition to a better practice kerbside system. 	<p>This may require external consultancy to assess design and collection options, with an estimated cost of \$10,000–\$20,000, depending on the depth of analysis required.</p> <p>If a third bin (FOGO) is introduced, funding will be required for bin procurement and delivery. These costs can be offset through annual waste fees and may be eligible for support under state programs such as Better Bins Plus: Go FOGO.</p> <p>A community education campaign to support rollout would be essential and could be delivered internally, with additional funding for materials and outreach support. Estimated cost: \$20,000–\$40,000, depending on campaign scope and duration.</p>

6.2.4 ENHANCE SERVICES IN THE EASTERN CORRIDOR

Priority: Short term

Findings	Issues	Action	Cost
<p>Community survey responses as part of the 2024 community survey and face to face feedback as part of the project highlight persistent litter, illegal dumping, and poor waste service standards in Roebourne.</p> <p>Residents report:</p> <ul style="list-style-type: none"> • Damaged bins (missing wheels, cracked lids) or missing bins • Inconsistent bin collection • Lack of support for bulk waste disposal • Low confidence in recycling knowledge • Poor street cleanliness and overgrown verges <p>There is a perceived inequity in service delivery compared to Karratha.</p> <p>Cleanaway report high contamination rates in bins, and stakeholder feedback indicates there is low confidence in knowing what can be recycled, and a strong desire for plain-language or image-based bin labels.</p> <p>The 22/23 City annual report states 'Roebourne and Point Samson have indicated that the City is underperforming in 'tip services'.</p>	<p>A uniform approach to the delivery of waste services does not meet the needs of all communities.</p> <p>Litter and dumping negatively impact health, safety, and community pride.</p> <p>Inconsistent services and a lack of culturally appropriate education reduce recycling and waste separation.</p>	<ol style="list-style-type: none"> 1. Conduct a targeted audit of bin services, bin condition, and litter hotspots in the Eastern Corridor. 2. Replace damaged bins and ensure all households have access. 3. Develop Culturally Appropriate Education Materials: Co-design bin stickers, signage, and guides with local stakeholders. 4. Establish a formal partnership with local stakeholders (e.g. NYFL) to explore and implement initiatives that support bulk waste removal from households and verges, enhance waste education, and coordinate community clean-up efforts. 5. Advocate for and explore partnership opportunities with a Containers for Change scheme operator to extend container refund services to Roebourne and surrounding remote communities (longer term action). 	<p>This action will likely require a combination of internal and external resources.</p> <p>While audits and stakeholder engagement may be managed internally, bin replacement, education material development, and bulk waste initiatives will require additional funding.</p> <p>Estimated cost: \$50,000–\$100,000, depending on the scale of bin replacement and the extent of community partnership programs.</p>

6.2.5 INCREASE USE OF HAZARDOUS WASTE DISPOSAL SERVICES

Priority: Short term

Findings	Issues	Action	Cost
<p>46% of survey respondents never use the Household Hazardous Waste (HHW) disposal point at the 7 Mile Waste Facility.</p> <p>41% never dispose of e-waste and batteries, and 83% never dispose of fluorescent tubing in the City's designated drop off points.</p> <p>Hazardous waste disposal was one of the least prioritised future initiatives by the community.</p>	<p>Low utilisation suggests a lack of awareness or accessibility, potentially leading to improper disposal in kerbside bins or illegal dumping.</p> <p>Improper disposal of hazardous waste poses environmental and health risks.</p> <p>The Community may not understand what qualifies as hazardous waste or where to take it.</p>	<ol style="list-style-type: none"> 1. Launch a targeted campaign to raise awareness about hazardous waste types, risks of improper disposal, and available drop-off services. 2. Incorporate HHW Messaging into Broader Waste Education programs (see Action 6.1). 3. Monitor and Evaluate Participation: Track usage of HHW services over time to assess the impact of education and service changes. 	<p>The City can deliver this action internally, leveraging the Waste Education Officer to develop and integrate hazardous waste messaging into existing programs. Costs will primarily relate to campaign materials, signage, and monitoring tools, with an estimated budget of \$10,000–\$20,000, depending on the scale and duration of the awareness campaign.</p>

6.2.6 INVESTIGATE THE DEVELOPMENT OF A RECYCLING PRECINCT

Priority: Medium term

Findings	Issues	Action	Cost
<p>The 7 Mile Tip Shop is highly valued by the community, with strong participation and satisfaction.</p> <p>Community and workshop feedback suggested expanding reuse and repair activities, including a repair café and a Men's Shed near the Tip Shop.</p> <p>Suggestions included providing shelter for the outdoor display area and creating a central hub for recycling and education.</p>	<p>The Tip Shop's potential as a community reuse and education hub is underutilised.</p> <p>The lack of infrastructure (e.g. shelter, workshop space) limits the expansion of reuse and repair activities.</p> <p>There is no existing precinct within the City to integrate reuse, recycling, education, and community engagement.</p>	<ol style="list-style-type: none"> 1. Develop a Concept Plan for a Recycling Precinct: Explore the expansion of the Tip Shop into a precinct that includes reuse, repair, recycling drop-off, and education facilities. 2. Engage Community Partners: Collaborate with groups like the local Men's Shed, and sustainability organisations to co-design and activate the space. 3. Upgrade Infrastructure: Provide shelter for the outdoor display area. 4. Seek Funding and Partnerships: Apply for grants and explore partnerships with local businesses and industry to support development and activation. 	<p>Development of a Recycling Precinct is likely to require external support for concept planning, infrastructure upgrades, and stakeholder engagement. While some initial planning could be done internally, estimated costs for concept development and basic infrastructure improvements (e.g. shelter, workshop space) could range from \$50,000 to \$150,000, depending on the scale and funding partnerships secured.</p>

6.2.7 EXPAND PUBLIC PLACE RECYCLING INFRASTRUCTURE

Priority: Medium term

Findings	Issues	Action	Cost
Community feedback highlighted a lack of public place recycling bins and limited access to drop-off points in town centres. Workshop participants expressed a desire for more accessible and visible recycling options. The City has previously resisted installing public place recycling bins due to high contamination rates.	<p>Lack of access to convenient recycling infrastructure may discourage proper recycling behaviours.</p> <p>Inconvenient or distant drop-off locations reduce participation and increase contamination in kerbside bins.</p> <p>There is a missed opportunity to reinforce recycling as a community norm in public spaces.</p> <p>There is a need to balance accessibility with contamination risk.</p>	<ol style="list-style-type: none"> 1. Trial Public Place Recycling Bins in Controlled Locations: Install bins in high-visibility, high-foot-traffic areas (e.g. near libraries, civic centres) within City managed public facilities, with clear signage and regular monitoring. 2. Use Contamination-Resistant Bin Designs: Select bin types with restricted openings, clear labelling, and paired general waste bins to reduce contamination. 3. Monitor and Evaluate Contamination Rates: Conduct regular audits during the trial to assess contamination levels and identify problem materials or locations. 4. Explore Localised Drop-Off Points: Investigate the development of smaller, decentralised recycling stations within town areas to increase accessibility. 5. Integrate with Education Campaigns: Promote correct use of new infrastructure through signage, social media, and community outreach during the trial period. 6. Provide public place recycling bins for use at community events and make them available for hire by organisations hosting events. 	<p>Expanding public place recycling infrastructure will require external procurement of bins and signage, but installation and monitoring can be managed internally.</p> <p>A small-scale trial is estimated to cost \$15,000–\$20,000, depending on the number of bins, design features, and extent of education and monitoring activities.</p> <p>Action 4 will likely require external consultancy. A feasibility study and concept planning project is estimated to cost between \$25,000–\$40,000, depending on the number of sites assessed and the level of community engagement involved.</p>

6.2.8 REVIEW PRE CYCLONE GREEN WASTE COLLECTION

Priority: Medium term			
Findings	Issues	Action	Estimated Cost
The City provides a pre cyclone greenwaste collection service through an external contractor. Participation rates are estimated at approximately 30% with only 200 tonnes collected annually. Domestic greenwaste disposal is free at the City waste facilities.	Low participation rates in the service result in high per tonne collection costs. The service may not be cost-effective given the low volume of material collected. The lack of data on participation and reasons for low uptake limits the City's ability to review and improve the service.	<ol style="list-style-type: none"> 1. Undertake a review of the pre-cyclone green waste collection service to assess cost-effectiveness and community value. 2. Identify barriers to participation (e.g. awareness, convenience) and explore targeted improvements to increase uptake. 3. Collaborate with companies that own a significant number of residential properties to promote uptake of green waste collection service. 	The review can be conducted internally. However, if external support is required for community engagement or cost-benefit analysis, the estimated cost would be \$20,000–\$40,000, depending on the depth of analysis and consultation involved.

6.2.9 UPGRADE BIN INFRASTRUCTURE AND ACCESS

Priority: Medium term			
Findings	Issues	Action	Estimated cost
A review of 2024 Community survey open responses showed reported issues with damaged kerbside bins, including cracked lids, broken wheels, and bins damaged during collection. Overflowing public bins and infrequent servicing were common complaints, particularly in high-traffic areas and near shopping centres. Requests were made for more public bins, especially in parks, walkways, and remote areas.	<p>Damaged or missing bins reduce service quality and contribute to littering and hygiene issues.</p> <p>Overflowing or poorly located bins undermine public confidence in waste services and contribute to windblown litter, illegal dumping and negative amenity impacts.</p>	<ol style="list-style-type: none"> 1. Conduct an audit of kerbside bins and prioritise replacement of damaged or missing units, especially in high-complaint areas. 2. Review public bin placement, capacity and servicing frequency, especially in high-use areas to reduce overflow and improve accessibility. 3. Strengthen contractor performance monitoring and response to service requests. 4. Enhance Community Communication on bin use, collection schedules, and how to report issues through the City's website and community channels. 	<p>The City may choose to conduct the bin audit internally using existing staff, or contract it out to an external provider. Outsourcing the audit would provide a more detailed and independent assessment, with estimated costs ranging from \$15,000–\$30,000, depending on the scale and level of detail required.</p> <p>Bin replacement and servicing improvements would involve external procurement, with total implementation costs estimated at \$50,000–\$100,000 depending on the number of bins replaced, servicing adjustments, and extent of public bin infrastructure upgrades</p>

6.3 GOAL 3: DATA, INFORMATION AND ECONOMICS

6.3.1 CONDUCT REGULAR KERBSIDE AUDITS

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>Kerbside MGB audits were conducted in 2015, 2016, and 2019 by an external consultant.</p> <p>The average bin weight was 17.5kg per household per week. General waste accounted for approx. 50% of the waste stream.</p>	<p>Audit data provides valuable insights into waste composition and contamination trends, which are essential for planning and prioritising recovery initiatives.</p> <p>Without regular audits, the City lacks up-to-date data to inform service improvements, education campaigns, and infrastructure investments.</p>	<ol style="list-style-type: none"> 1. Establish a regular schedule for kerbside MGB audits to monitor changes in waste composition, contamination rates, and service performance. 2. Use audit results to guide decision-making on resource recovery priorities, education strategies, and infrastructure planning. 	<p>Kerbside waste audits are generally outsourced, with costs typically ranging from \$15,000 to \$30,000 per audit round, depending on the scope, number of households sampled, and level of detail required.</p>

6.3.2 CALCULATE WHOLE OF LIFE(WOL) COSTS

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>The City has not recently calculated the full cost of waste disposal and airspace establishment at the Seven Mile Waste Disposal Facility.</p> <p>The City maintains a strong waste reserve and generates significant income from gate fees, but long-term cost recovery and sustainability need to be assessed.</p> <p>Whole-of-life (WoL) costing is essential for evaluating the economic viability of resource recovery initiatives versus landfilling.</p>	<p>Without WoL cost data, the City may under- or over-invest in landfill infrastructure or miss opportunities to justify alternative waste treatment options.</p> <p>Lack of cost transparency may limit strategic financial planning and hinder the ability to set appropriate fees or secure funding.</p>	<ol style="list-style-type: none"> 1. Undertake a Whole-of-Life Costing Assessment for landfill operations and transfer station operations. 2. Incorporate WoL Costs into Financial Planning, asset renewal plans and Long term financial planning. 3. Use WoL costs to assess the economic case for investing in recovery infrastructure (e.g. organics, C&D processing) as alternatives to landfilling. 4. Ensure that current gate fees and reserve allocations are calculated on WOL costs and are sufficient to cover long-term landfill liabilities. 	<p>Action 1 will likely require external consultancy, with an estimated cost of \$15,000–\$30,000, depending on the depth of analysis.</p> <p>All other actions can be managed internally with minimal additional expense.</p>

6.3.3 ASSESS INTERNAL RESOURCE CAPACITY

Priority: Medium term			
Findings	Issues	Action	Estimated cost
<p>This Action Plan outlines initiatives that the City will undertake over the coming years.</p> <p>City staff have identified a lack of internal resources to deliver or expand community education programs, and adequate provision for investigating options for the resolution of problem waste streams.</p>	<p>There is a significant risk that inadequate resource capacity exists to implement actions contained within this Plan over and above existing workloads.</p> <p>Without adequate internal capacity, the City may face delays, or reduced effectiveness in delivering waste strategy outcomes.</p> <p>Resource constraints may also limit the City's ability to engage in regional collaboration, education, and infrastructure planning.</p>	<ol style="list-style-type: none"> 1. Ensure operational and workforce planning processes incorporate the resourcing needs of the Waste Strategy 2030. 2. Recognise that implementation of the plan is expected to generate savings, income, and efficiencies that can offset the cost of additional staffing. 	<p>The recent appointment of a Waste Education Officer addresses part of the internal capacity needs. However, to fully implement the Waste Strategy 2030, the City should review existing staff workloads to ensure the additional expectations of the strategy are realistically incorporated. While some actions may be absorbed internally, additional staffing or external support may still be required.</p>

6.4 GOAL 4: LITTER AND ILLEGAL DUMPING

6.4.1 DEVELOP A LITTER AND ILLEGAL DUMPING STRATEGY

Priority: Medium term			
Findings	Issues	Action	Estimated cost
<p>The 2024 Community Survey results had over 45 comments specifically referencing illegal dumping, making it the most frequently mentioned waste-related issue. Residents expressed frustration with persistent dumping in bushland, verges, and remote areas, particularly in Wickham, Roebourne, Cheeditha and Baynton. Comments highlighted a lack of enforcement, insufficient clean-up, and a desire for more community-led solutions. Overflowing or insufficient public bins were also raised as contributing factors to littering.</p> <p>Despite free disposal options and seven-day access to facilities, illegal dumping is reported as a persistent issue.</p> <p>There is currently no formal litter or illegal dumping strategy in place.</p> <p>The WARR Strategy 2030 includes a target to reduce littering by 30% by 2030 and encourages local governments to adopt coordinated litter prevention and enforcement approaches.</p> <p>Currently, the responsibility for managing litter and illegal dumping in public places in the City is divided amongst departments.</p>	<p>The size of the City and long travel distances make surveillance and timely response to illegal dumping difficult.</p> <p>The divided responsibilities across departments may lead to inefficiencies or gaps in enforcement and response, with minimal resources currently available for strategic management of litter and illegal dumping.</p> <p>The cost of cleaning up litter and illegally dumped waste is borne by the community.</p> <p>Community frustration is growing due to perceived inaction.</p>	<ol style="list-style-type: none"> 1. Develop a City-Wide Litter and Illegal Dumping Strategy aligned with the WARR Strategy 2030 litter reduction target. This could include: <ul style="list-style-type: none"> • Development of good data capture methods to support the development and implementation of responses to this problem. • Education, awareness and behaviour change initiatives to prevent the creation of litter and to achieve long-term positive behavioural change. • Review litter infrastructure to ensure it is adequate to facilitate the disposal of materials. • Consistent and effective enforcement strategies to change behaviour and reinforce the commitment to a community with less littering and illegal dumping. • Explore partnerships with external groups (e.g. environmental NGOs, community organisations) to support litter prevention through education and behaviour change initiatives. • Identification of responsibilities within the City for management of these cross-business unit functions. • Training and development requirements for City staff to increase their level of expertise in regard to effective management of litter and illegal dumping. 2. Enhance Surveillance and Reporting Tools: Explore the use of mobile apps, community reporting platforms, and targeted surveillance in high-risk areas. 3. Monitor and Evaluate Outcomes to inform future improvements and report against WARR Strategy targets. 	<p>Internal staff time will be required to develop the strategy. Alternatively, this could be outsourced.</p> <p>(Cost approx. \$20k - \$40k, dependent on scope)</p> <p>Funding support may be required for specialised tasks such as data system development, community engagement programs, and surveillance technology.</p> <p>The Keep Australia Beautiful Council Western Australia (KABC) provides Community Litter Grants which may be applicable.</p>

6.5 GOAL 5: POLICY AND PROCUREMENT

6.5.1 ADOPT WASTE LOCAL LAWS

Priority: Short term

Findings	Issues	Action	Estimated cost
The City has not yet implemented Waste specific local laws. Under the Waste Avoidance and Resource Recovery Act 2007 (WARR Act), local governments can enact waste local laws with improved enforcement provisions compared to those under the Health Act 1911.	Without a waste-specific local law, the City has limited regulatory tools to manage waste collection, disposal, and compliance effectively. The absence of enforceable provisions may hinder efforts to reduce contamination, manage illegal dumping, and ensure consistent service standards.	Adopt a waste local law based on WALGA waste local law template to improve the regulation and enforcement of waste and refuse.	If done internally with minimal external input, costs may range from \$5,000 to \$10,000, primarily covering staff time and minor legal consultation.

6.5.2 ALIGN STRATEGIC COMMUNITY PLANS AND OPERATIONAL PLANS WITH THE WASTE STRATEGY

Priority: Short term

Findings	Issues	Action	Cost
Waste plans are considered issue-specific informing strategies within the local government integrated planning framework. The Strategic Waste Management and Resource Recovery Strategy (the Waste Strategy) must be linked to the City's Strategic Community Plan (SCP), Corporate Business Plan (CBP), and annual operational plans to ensure implementation	Without formal integration into strategic and operational planning documents, actions within the SWMRP may not be progressed, funded, or resourced.	The Waste Strategy is endorsed by the Council to inform relevant City strategic community planning goals and annual corporate and operational plans.	This action can be undertaken using internal resourcing, particularly through collaboration between the City's waste, and corporate planning teams.

6.5.3 INTEGRATE WASTE RELATED ACTIONS INTO THE CITY'S EMISSIONS REDUCTION PLAN AND SUSTAINABILITY STRATEGY

Priority: Medium term			
Findings	Issues	Action	Cost
<p>Waste-related emissions from local government waste operations typically represent a significant portion of a municipality's total greenhouse gas emissions and highlights the importance of sustainable waste policies and infrastructure in achieving municipal climate goals.</p> <p>The National Waste Policy and WA Climate Policy both identify waste sector emissions as a priority for reduction.</p> <p>The City is in the process of quantifying emissions and developing reduction actions for all operations through its Emissions Reduction Planning project.</p>	<p>This Waste Strategy and Emissions Reduction Plan were developed concurrently.</p> <p>There is a need to ensure this strategy integrates with the Emissions Reduction Plan to complement climate action and reporting.</p>	<ol style="list-style-type: none"> 1. Integrate relevant waste-related actions into the Emissions Reduction Plan. 2. Refer to the Emissions Reduction Plan as the guiding document for identifying and implementing relevant waste-related emissions reduction measures. 	<p>This can be undertaken using internal resources,</p>

6.5.4 EMBED WASTE MANAGEMENT INTO LOCAL PLANNING INSTRUMENTS

Priority: Long term

Findings	Issues	Action	Cost
<p>The City's Local Planning Strategy references waste management but does not identify buffers or future waste facility sites.</p> <p>The Local Planning Scheme does not define waste-related land uses (e.g. resource recovery facility, waste disposal facility) as per the Planning and Development (Local Planning Schemes) Regulations 2015.</p> <p>The Seven Mile Waste Facility is expected to meet demand until 2044, but no future planning provisions are in place.</p> <p>The City has not adopted a local planning policy requiring the preparation of waste management plans for proposed developments in the City. Part C of the Residential Design Codes requires a waste management plan to be submitted for multiple dwelling development and 5+ grouped dwelling developments only.</p>	<p>Without defined land uses and buffers, there is a risk of land use conflict and encroachment by sensitive receptors.</p> <p>The absence of planning protections may limit the City's ability to expand or adapt waste infrastructure in the future.</p> <p>Lack of alignment with state planning regulations may reduce strategic clarity and investment confidence.</p> <p>Increased volumes of mixed construction and demolition waste are being disposed of in landfill if developments are not constructed and operated to maximise waste avoidance and resource recovery.</p>	<ol style="list-style-type: none"> 1. Update the Local Planning Scheme for waste-related land uses (e.g. resource recovery facility, waste disposal facility, waste storage facility) in line with the Planning and Development (Local Planning Schemes) Regulations 2015 as part of the next Scheme Review Process. 2. Identify and Protect Waste Infrastructure Sites with appropriate land use buffers to prevent encroachment. 3. Consider expanding the requirements for the submittal of waste management plans developments in the City. 	<p>These planning updates can be undertaken using internal resources, primarily through the City's strategic planning team as part of the next Scheme Review Process. No significant external resourcing is expected, and costs will be absorbed within existing operational budgets.</p>

6.6 GOAL 6: BEHAVIOUR CHANGE PROGRAMS

6.6.1 STRENGTHEN WASTE EDUCATION AND BEHAVIOUR CHANGE PROGRAMS

Priority: Short term

Findings	Issues	Action	Estimated cost
<p>58% of survey respondents reported low to moderate confidence in knowing what can be recycled.</p> <p>High contamination rates in kerbside recycling were reported by Cleanaway.</p> <p>79% of respondents agreed that the City should provide more education on waste reduction and recycling.</p> <p>Community and stakeholder feedback highlighted the need for consistent, targeted education—especially for transient populations.</p> <p>City staff have identified a lack of internal resources to deliver or expand community education programs.</p> <p>Language diversity, literacy and numeracy challenges, and the seasonal impacts of tourism were identified as important considerations in the development and delivery of waste education programs.</p>	<p>Waste generators play a significant role in determining resource recovery rates achieved by the City. This will be influenced through the participation in recycling services provided and the amount of contamination within collected materials.</p> <p>Lack of recycling knowledge contributes to contamination and improper disposal.</p> <p>Transient populations and limited community engagement reduce the effectiveness of one-off education efforts.</p> <p>Without behaviour change, infrastructure improvements alone will not achieve recovery targets.</p> <p>Resource constraints limit the City's ability to deliver sustained education and engagement.</p> <p>Without accounting for language, literacy, and seasonal population changes (e.g. tourism), education programs may fail to reach or resonate with key segments of the community, limiting their effectiveness and uptake.</p>	<ol style="list-style-type: none"> Develop and implement a Multi-Year Waste Education Strategy that includes: <ul style="list-style-type: none"> Ongoing community campaigns using local media, social platforms, events, and signage. Behavioural nudges such as bin tagging and feedback cards or visual cues to reinforce correct behaviours at the household level Pilot incentive-based waste reduction programs (e.g. rewards for low contamination) to encourage positive behaviours and test community response Tailored messaging and delivery methods for key audiences (e.g. new residents, schools, FIFO workers, indigenous communities) with tailored messaging and delivery methods. Secure Resources to Support Delivery Partner with stakeholders to support community-led initiatives like clean-up days and waste-free events. Collaborate with organisations like Rio Tinto to distribute recycling information to tenants. Seek Funding or Partnerships to Support Delivery: Explore grant opportunities or partnerships with local organisations to resource and deliver education programs. Evaluate and Adapt: Monitor contamination rates, service usage, and community feedback to refine education efforts over time. Review and enhance the City's grant programs to support and incentivise community groups and businesses to implement waste avoidance, resource recovery, and circular economy initiatives. 	<p>With the recent appointment of a Waste Education Officer, this action can be resourced internally. Additional funding will be required to support Strategy implementation, incentive schemes, and outreach efforts targeting diverse and transient populations.</p> <p>There may be potential to draw down Waste Authority funding to support waste education initiatives once developed.</p>

6.7 GOAL 7: ABORIGINAL COMMUNITIES

6.7.1 IMPROVE SERVICES AND INFRASTRUCTURE FOR ABORIGINAL COMMUNITIES

Priority: Short term

Findings	Issues	Action	Cost
<p>The City provides kerbside collection to Roebourne and Cheeditha, along with fee waivers for Mingullatharndo and Weymul communities to access the WTS.</p> <p>Waste services are limited in remote Aboriginal communities, and access to infrastructure is constrained.</p> <p>The WARR <i>Strategy 2030</i> and <i>Closing the Gap National Agreement</i> prioritise improved infrastructure, and community-led planning in Aboriginal communities.</p>	<p>Current services may not fully meet the needs of Aboriginal communities in terms of accessibility, cultural appropriateness, or infrastructure quality.</p> <p>There is no formal engagement or co-design process in place to ensure services reflect community needs.</p> <p>A lack of data and feedback mechanisms limits the City's ability to monitor service effectiveness or identify gaps.</p>	<ol style="list-style-type: none"> 1. Engage with Aboriginal organisations to understand infrastructure needs (e.g. bins, signage, drop-off points), barriers, and culturally appropriate service models. 2. Align actions align with the Closing the Gap commitments including Priority Reform 1 (formal partnerships and shared decision-making) and Target 9 (infrastructure and essential services). 3. Secure Funding for Service Improvements through state and federal programs. 	<p>Costs for this action will depend on scope of community engagement required and the extent of infrastructure upgrades proposed.</p> <p>Engagement can be carried out internally or alternately outsourced.</p> <p>Funding is expected to be sought through state and federal programs to support improvements.</p>

6.8 GOAL 8: REGIONAL EFFICIENCIES

6.8.1 ESTABLISH A PILBARA REGION OFFICERS ADVISORY GROUP

Priority: Medium term

Findings	Issues	Action	Estimated cost
There is limited opportunity for collaboration to progress initiatives across the region. There is no formal system for regional communication, cooperation and collaboration at a Local Government level.	Increased cost of services due to the limited economies of scale achieved. Limited information sharing and problem solving. No opportunity for regional collaboration on projects. Limited access to regional funding streams.	<ol style="list-style-type: none"> 1. Establish a Local Government Officers Group that meets regularly (at least quarterly) to discuss waste management and resource recovery matters. 2. Use the group to support regional planning, funding applications, and collaborative project delivery. This is an opportunity which, if actioned, could assist in reducing capital expenditure and increasing the economic feasibility of recycling and recovery programs in the region. 	The costs relate to internal City resources and the additional time spent preparing, disseminating information and holding additional meetings.

6.8.2 ADVOCATE FOR REGULATORY AND POLICY REFORM IN THE MINING SECTOR

Priority: Medium term

Findings	Issues	Action	Estimated cost
The mining and resources sector generates significant volumes of complex and problematic waste streams (e.g. tyres, bulka bags, IBCs). Current regulatory frameworks and voluntary stewardship schemes do not adequately address the transport, processing, or recovery of these materials in remote regions. Many mining companies have corporate sustainability strategies, but waste minimisation and recycling are often underrepresented. Local governments often bear the cost and risk of managing these waste streams due to limited industry accountability.	Local governments have limited influence over mining waste practices without stronger state or federal policy support. Opportunities for circular economy outcomes are missed due to fragmented regulation and inconsistent industry participation. Lack of visibility of waste performance in sustainability reporting reduces accountability and innovation.	<ol style="list-style-type: none"> 1. Advocate for Mandatory Product Stewardship Schemes for mining-related waste (e.g. tyres, bulka bags, IBCs) that include funding for collection and transport. 2. Advocate for the inclusion of waste minimisation and recovery obligations in regulation, mining agreements, environmental approvals and sustainability reporting. 3. Support the development of shared infrastructure and logistics solutions that align with both local government and industry sustainability goals. 4. Seek cooperation from major resource sector companies to provide annual waste generation and diversion data. This will complement existing emissions reporting obligations and support regional emissions reduction tracking. 	The costs are associated with the use of internal City resources and the extra time required for preparing submissions, providing responses, and offering feedback as needed.

6.8.3 FACILITATE THE FORMATION OF A REGIONAL WASTE MANAGEMENT ALLIANCE

Priority: Long term			
Findings	Issues	Action	Estimated cost
<p>Consultation revealed strong support for regional collaboration amongst stakeholders.</p> <p>Stakeholders identified duplicated efforts, inefficiencies, and a lack of coordination as barriers to effective waste management.</p> <p>There is no current mechanism to coordinate regional waste planning or infrastructure investment.</p> <p>The <i>Waste Strategy 2030</i> also sets targets for the commercial sector, which apply to many of the region's key stakeholders.</p> <p>The State Waste Infrastructure Plan (DWER, 2024) provides a strategic foundation for identifying regional infrastructure needs and opportunities.</p> <p>Regional infrastructure planning presents an opportunity to support local employment, entrepreneurship, and innovation.</p>	<p>Without coordination, stakeholders operate in silos, missing opportunities for shared infrastructure, transport efficiencies, and economies of scale.</p> <p>Regional development opportunities are constrained by the absence of a clear vision and roadmap for infrastructure investment and innovation.</p> <p>Problem waste streams and infrastructure gaps persist due to fragmented planning.</p> <p>Local governments may lack the capacity to independently assess or implement emerging technologies.</p> <p>Coordination and collaboration require an independent party to drive actions and maintain momentum. Without coordination, stakeholders may struggle to meet Waste Strategy targets individually.</p>	<ol style="list-style-type: none"> 1. Engage Stakeholders to Confirm Interest and Commitment: Conduct targeted engagement with local governments, industry, and service providers to confirm interest in forming a regional alliance. Identify shared priorities, potential contributions, and expectations to inform the structure and scope of the alliance. 2. Develop and establish a Regional Waste Management Alliance involving LGAs, industry, and waste service providers to drive collaborative waste management and resource recovery initiatives across the Pilbara region. 3. Determine a Sustainable Management and Funding Model for the Group: Identify and agree on a governance and funding model for the group. This may include appointing an independent coordinator (e.g. consultant, Pilbara Development Commission, or another agency). Explore cost-sharing among stakeholders or seek external funding to support this role. 4. Develop a Shared Regional Waste Vision: Co-design a strategic vision for waste and resource recovery in the Pilbara, aligned with state and national targets. 5. Identify and Prioritise Collaborative Projects: Use the Alliance as the coordinating forum to progress regional infrastructure planning, building on the State Waste Infrastructure Plan (DWER 2024). Projects could include shared transport solutions, stockpiling hubs, regional processing opportunities for problem waste streams, and developing and supporting local end markets for material streams. 6. Seek State Support and Funding: Advocate for state-led coordination and funding to support regional collaboration and infrastructure development. 	<p>Expected costs for this initiative will primarily involve the use of internal City resources to support stakeholder engagement, coordination, and planning activities. Additional funding may be sought externally to support the appointment of an independent coordinator and the development of shared infrastructure projects.</p>

7 IMPLEMENTATION, MONITORING AND REVIEW

7.1 IMPLEMENTATION

This Strategy sets a clear path toward more sustainable and efficient waste management for the next 10 years. Its implementation should be reviewed and adapted by the City over time, particularly for more complex actions that will require detailed project planning, feasibility assessments, or staged delivery.

To support effective implementation, the following principles are recommended:

- **Integration with Corporate Planning:** Actions should be embedded into the City's Corporate Business Plan, Long-Term Financial Plan, and annual budgets to ensure alignment with broader strategic and financial priorities.
- **Phased Delivery:** Actions have been prioritised by the City. Some actions will require staged delivery over multiple years.
- **Resourcing:** Adequate internal capacity and resourcing will be essential to deliver the Strategy. This may include dedicated project management, technical expertise, and communications support.
- **Collaboration and Partnerships:** Some actions will benefit from or require collaboration with regional stakeholders, industry, and the community. The City should continue to foster partnerships to leverage shared resources and expertise.

7.2 IMPLEMENTATION PLAN

To support delivery of the Strategy, **Table 7.1** presents a consolidated view of the strategic goals and objectives, along with indicative cost estimates and implementation timeframes. This table is intended to guide informed decision-making and resource allocation by summarising the key actions required across short-term (2025–2027), medium-term (2027–2030), and long-term (beyond 2030) horizons. Costs do not include internal resourcing or staff time allocations, which are assumed to be managed within existing operational budgets. This framework provides a practical tool to support annual operational planning, budget development, and long-term investment.

7.3 MONITORING AND REVIEW

Ideally, the progression of initiatives should be integrated into the City's Strategic Community Plan, with specific actions incorporated into annual Corporate Business Plans and reported to the community as part of regular performance updates.

In addition to tracking implementation progress, the Strategy should be treated as a dynamic document, reviewed and updated periodically to ensure it remains relevant to emerging waste management issues, legislative changes, and evolving community needs.

Table 7.1: Implementation Plan

Goal and Objective	Obj #	Estimated costs 2025 – 2027	Estimated costs 2027 – 2030	Estimated costs Beyond 2030+	Notes
Goal 1: Waste Infrastructure and Operations					
Establish better practice infrastructure	6.1.1	Benchmarking Maintain and deliver capital works program \$30,000 - \$50,000	Maintain and deliver capital works program \$50,000 - \$100,000	Maintain and deliver capital works program	Funding for Feasibility methane capture (short term) and Regional Waste to Energy (medium term) Benchmarking, planning, and integration into financial and asset systems can be managed using existing staff resources. Specific funding will be required for capital works, which will need to be identified and prioritised through the Long-Term Financial Plan process.
Resolve legacy stockpile issues	6.1.2	\$40,00 - \$70,000	\$10,000		Funding for assessment and analysis actions by consultant.
Review WTS operations	6.1.3	\$35,000 - \$60,000	Implement		Funding for operational review, data system upgrades, community engagement. Additional funding maybe required for infrastructure upgrades as result of operational review.
Develop a masterplan for the SMWDF	6.1.4	\$35,000- \$50,000	Implement	Implement	Design and costing by consultant, cost dependent on the depth of analysis, technical design requirements required.
Renaming of the SMWDF to reflect a resource recovery focus	6.1.5		\$5,000 - \$10,000		Funding for branding updates and community engagement activities.
Plan for long term disposal capacity	6.1.6		\$50,000 - \$70,000	Implement	Funding for revised LCMP and staged closure plan by consultant, cost dependent on scope of works required.
Goal 2: Waste Services					
Analysis of future resource recovery services	6.2.1	\$40,000 - \$60,000	Implement	Implement	Funding for resource recovery option analysis by consultant, cost dependent on scope of works required. Funding does not include implementation costs.
Assess the feasibility of organics recovery	6.2.2		\$40,000 - \$60,000	Implement	Funding for Composting Rebate Program (\$45K already identified) Funding for feasibility study. Additional costs may be incurred for developing a business case and long-term strategy if the project is deemed feasible.
Reduce contamination in kerbside recycling bins	6.2.3	\$10,000 - \$20,000			Funding for education materials and recycling guidelines.
Investigate options for MGB standardisation	6.2.3		\$10,000 - \$20,000	Implement	Funding for planning and community education. Bin upgrade costs are not included and will depend on breadth of changes required and can be offset through annual waste fees.
Investigate transition to better practice kerbside services	6.2.3		\$10,000 - \$20,000	Implement	Funding for assessment of design and collection options. Funding does not include 3 rd bin costs, or additional collection costs.
Enhance services in the Eastern Corridor	6.2.4	\$50,000 - \$100,000	Implement		Funding for bin replacement, education material development, and bulk waste initiatives. Costs will depend on the scale of bin replacement and the extent of community partnership programs.
Increase use of hazardous waste disposal services	6.2.5	\$10,000 - \$15000			Funding for campaign materials, signage, and monitoring tools.
Investigate the development of a recycling precinct	6.2.6		\$50,000 - \$100,000	Implement	Funding for concept development and basic infrastructure improvements (e.g. shelter, workshop space).
Expand public place infrastructure	6.2.7		\$40,000 - \$60,000	Implement	Funding for small scale public place recycling trial and feasibility study for local recycling stations.
Review pre cyclone green waste collection	6.2.8		\$20,000 - \$40,000	Implement	The review can be conducted internally. Alternatively can be undertaken by external consultant. Funding provided for review project including community consultation.
Upgrade bin infrastructure and access	6.2.9		\$15,000 - \$25,000	Implement	Funding for external bin audit. Does not include funding for bin replacement and infrastructure upgrades, servicing adjustments.
Goal 3: Data, Information and Economics					
Conduct regular kerbside audits	6.3.1	\$15,000 - \$25,000		\$15,000 - \$25,000	Funding for external waste audits, dependent on scope.
Calculate WOL costs	6.3.2	\$15,000 - \$30,000			Funding for WOL cost assessment, dependent on scope.
Assess internal resourcing capacity	6.3.3	Assess	Assess	Assess	While some actions may be absorbed internally, additional staffing or external support may still be required.
Goal 4: Litter and Illegal Dumping					
Develop a Litter and Illegal Dumping strategy	6.4.1		\$20,000 - \$40,000		Funding for Litter Strategy development. Funding does not cover implementation or specialised tasks such as data system development, community engagement programs, and surveillance technology.
Goal 5: Policy and Procurement					
Adopt Waste local laws	6.5.1	\$5,000			Funding for legal review.
Align Strategic Community Plans and operational plans	6.5.2	Implement	Implement	Implement	Internal resources.
Integrate waste related actions into the City's Environmental Sustainability Strategy	6.5.3		Implement		Internal resources.
Embed waste management into local planning instruments	6.5.4			Implement	Internal resources.
Goal 6: Behaviour Change Programs					
Strengthen waste education and behaviour change programs	6.6.1	Develop & implement	Implement	Implement	Internal resources. Funding will be required to support education strategy implementation.
Goal 7: Aboriginal Communities					
Improve services and infrastructure for aboriginal communities	6.7.1	Engage	Implement	Implement	Internal resources. Funding will be required for infrastructure upgrades that may be able to be sort through state or federal support programs.
Goal 8: Regional Efficiencies					
Establish a Pilbara region officers' advisory group	6.8.1		Establish and Implement	Implement	Internal resources.
Advocate for regulatory and policy reform in the mining sector	6.8.2		Implement	Implement	Internal resources.
Facilitate formation of a regional waste management alliance	6.8.3			Implement	Internal resources. Additional funding may be sought externally to support the appointment of an independent coordinator and shared infrastructure projects.

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APPENDIX A – BASELINE REPORT

APPENDIX B: COMMUNITY CONSULTATION OUTCOMES REPORT