

Regional summaries

This section provides more detail on the waste generation and infrastructure needs of each region in Western Australia. Each summary includes a snapshot of the region's industries, demographics and economy, painting a picture of how the region's activities have influenced waste generation in 2020. The 2020 waste generation and demographic data is then used to estimate 2030 waste generation.

The 2020 resource recovery infrastructure capacity is based on licensed capacity which was obtained through the *State Waste Infrastructure Register*. Gaps in existing infrastructure capacity are identified when comparing 2020 infrastructure capacity and 2030 waste generation data. Projections of needed waste infrastructure are developed using the methodology described in previous sections. Existing and planned infrastructure by region is compared to projected waste volumes to determine need, based on the concept of critical mass presented in this plan and the need for expansion of existing or development of new facilities.

Each regional summary includes waste generation by source, including MSW, C&D and C&I, to provide more insight and guide decision-making at the regional level. Each regional summary includes:

- an assessment of the social, economic and environmental indicators of the region
- a summary of waste generation, treatment and movements in 2020
- a summary of waste generation and treatment in 2030
- infrastructure capacity needs in 2030, including assessment of opportunities to provide or access capacity in neighbouring regions
- breakdown of the waste by facility type and source (MSW, C&I or C&D) in 2030
- breakdown of the material generation and recovery in 2030
- analysis of landfills by type and identified capacity risk
- an assessment of the principles and priorities for the region.

A desktop assessment of facilities' licences has been employed to understand infrastructure capacity and, as such, may not accurately reflect the specific activities conducted on site. This is one of the key limitations of with the *State Waste Infrastructure Needs Analysis* methodology for assessment, particularly in relation to FOGO recovery facility capacity needs and organics recovery facility capacity needs.

The infrastructure plan focuses on identifying infrastructure needs in alignment with meeting the waste strategy targets. Targets specifically relating to FOGO are currently limited to the Perth and Peel regions. In regions outside of Perth and Peel, FOGO waste is collectively categorised as 'organics'. Stakeholder feedback highlighted this gap in the 2030 needs assessment as several major regional centre municipalities, such as the South West and Great Southern, are considering or implementing FOGO recovery as a means to achieve their MSW recovery targets.

While there appears to be sufficient licensed capacity for organics recovery to meet regional demands until 2030, the specific availability of FOGO recovery capacity remains uncertain. In addition, there is potential for barriers to arise in regions outside of Perth and Peel depending on regional approaches on kerbside FOGO recovery. Some facilities, despite being licensed for FOGO waste, either do not accept it or handle quantities below their licensed capacity. This is discussed in more detail in the Considerations and limitations section.

Further, more detailed exploration of FOGO capacity needs outside Perth and Peel is required as an area of future work.

The infrastructure plan includes a summary for each region outlined in Figure 22:

- Perth
- Peel
- Pilbara
- Kimberley
- South West
- Great Southern
- Mid West
- Gascoyne
- Wheatbelt
- Goldfields-Esperance.

Major regional centres as defined by the waste strategy are also included in assessments:

- Albany (Great Southern region)
- Bunbury (South West region)
- Busselton (South West region)
- Greater Geraldton (Mid West region)
- Kalgoorlie-Boulder (Goldfields-Esperance region).

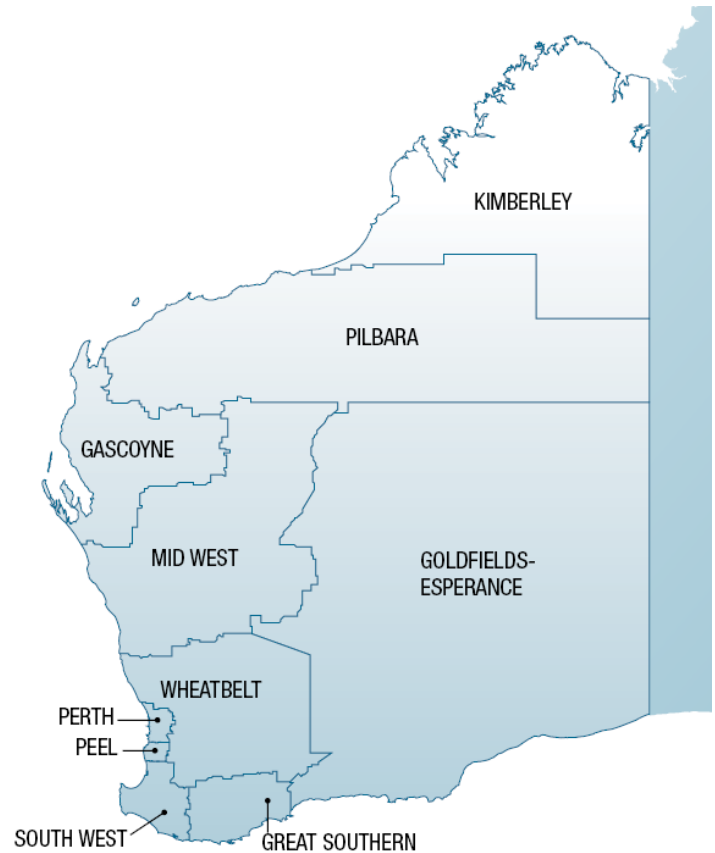


Figure 22 Regions used for the infrastructure plan

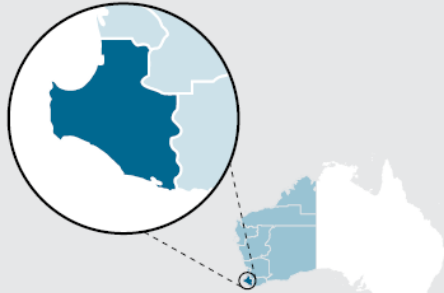
South West region

Waste profile in 2020

The South West region has the second largest waste generation and treatment rate in Western Australia. The region generated 425,000 tonnes of waste in 2020, which was predominantly generated by the C&I sector (53 per cent), with the remaining 47 per cent evenly split between MSW and C&D waste. This region received 334,000 tonnes of waste from other regions, predominantly from Perth and Peel. This material mainly consisted of mixed putrescible waste from domestic (household) and commercial sources. In total, the region treated 651,000 tonnes in 2020, with 325,000 tonnes (49 per cent) being recovered and 326,000 tonnes (51 per cent) being landfilled. Key waste profile data for the South West waste and resource recovery in 2020 is presented below.

Residents in the South West	7 per cent of Western Australia's population resides in the South West region.
	Population density of 8 people per km ² .
	Residents mostly live on the western coastal side of the region, with higher density around Busselton and Bunbury city centres.
Local governments in the region	Shire of Augusta-Margaret River, Shire of Boyup Brook, Shire of Bridgetown-Greenbushes, City of Bunbury, City of Busselton, Shire of Capel, Shire of Collie, Shire of Dardanup, Shire of Donnybrook-Balingup, Shire of Harvey, Shire of Manjimup, and Shire of Nannup.
Generating waste	The South West generates 7 per cent of the waste generated in Western Australia.
Transporting waste	Strong road network and commercial ports connects the South West with reprocessing infrastructure in Perth and Peel.
Treating waste	The South West treats 11 per cent of the waste treated in Western Australia.
	The South West recovers 10 per cent of the waste recovered in Western Australia.
	The South West landfills 12 per cent of the waste landfilled in Western Australia.
	Plays a critical role in providing additional putrescible waste landfill capacity for Perth and Peel.

SOUTH WEST REGIONAL SUMMARY

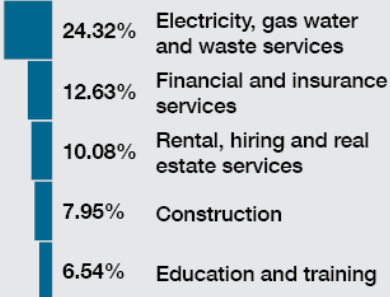


AREA
24,000 km²

GROSS REGIONAL PRODUCT (2019-20)
\$14.19B/CAP

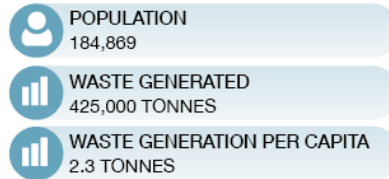
NUMBER OF BUSINESSES (2019-20)
15,055

TOP 5 EMPLOYMENT BY INDUSTRY



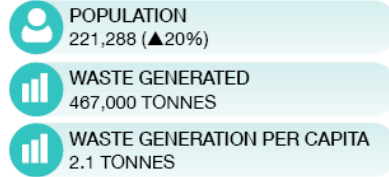
The manufacturing industry sector makes the greatest contribution to economic output in the region, which at \$8.0B accounts for 22.67% of total output. With 8,780 jobs representing 10.92% of total employment, it is the construction industry sector that is the region's largest employer.

2020



2030

PROJECTIONS TO 2030 BASED ON ACHIEVING WASTE STRATEGY TARGETS



2030 INFRASTRUCTURE CAPACITY NEED

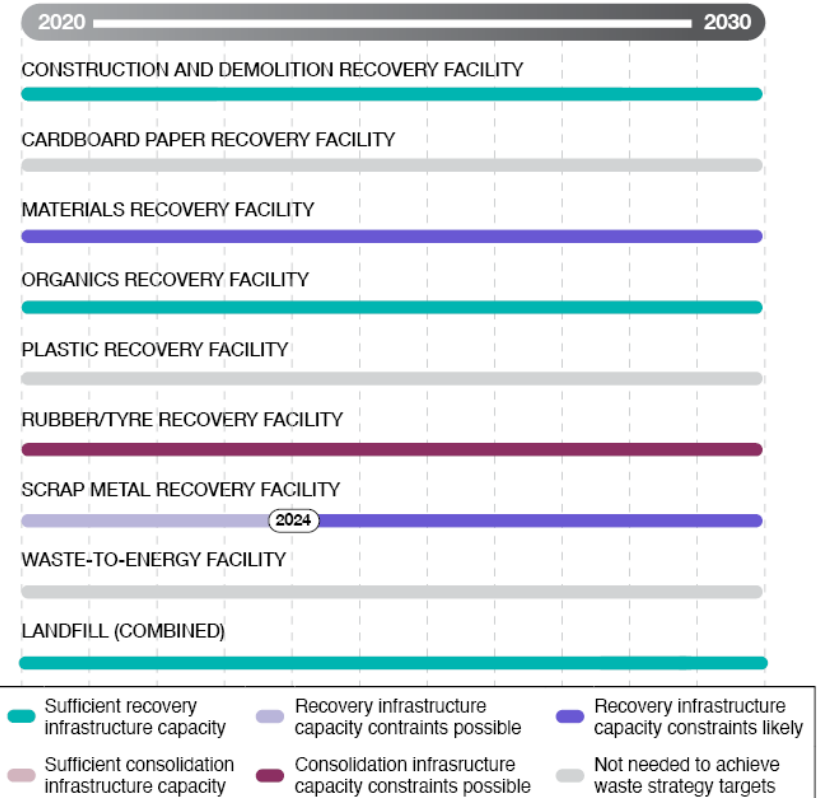
1. Material recovery facility | 64,000 tonnes
2. Rubber/tyre | 8,000 tonnes
3. Scrap metal | 72,000 tonnes
4. Waste-to-energy | 91,500 tonnes

TOP PRIORITIES

1. Investigate designating a strategic industrial area east of Greater Bunbury.
2. Investigate a scrap metal recovery facility and options for consolidation centre for transfer of waste to Waste-to-energy in Perth.
3. Investigate alternative landfill facility contingency arrangements with the Great Southern and Wheatbelt region.
4. Assess whether existing 67A licensed facilities can be increasingly utilised to alleviate food organics and garden organics recovery capacity need in neighbouring regions.

INFRASTRUCTURE NEED BETWEEN 2020 AND 2030

Projections for capacity constraints compare current, approved and planned capacity against the infrastructure needs by 2030 to meet the waste strategy targets.



WASTE IN SOUTH WEST 2020 AND 2030

Waste projections to 2030 based on meeting the waste strategy targets

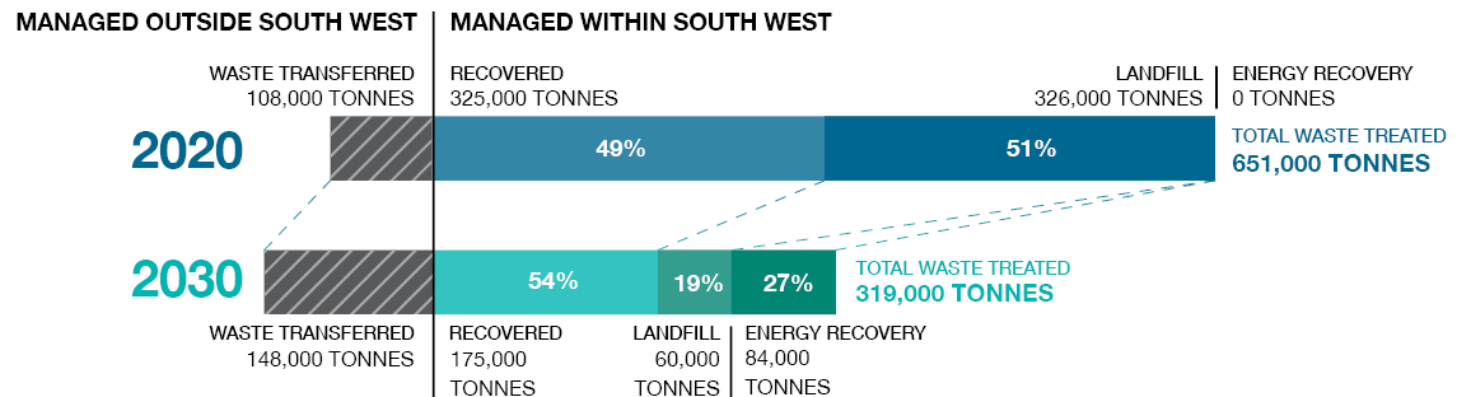


Figure 53 Waste in the South West: statistics and projections

Waste and resource recovery in 2020

The South West region plays an important role in providing treatment capacity for waste generated in the Perth and Peel regions. This contributes to the region's proportionally high volume of material received in from other regions (51 per cent of total waste treated). The top five material processed in the region in 2020 include:

1. mixed C&D
2. mixed putrescible waste – domestic (household)
3. forestry waste
4. metals – ferrous steel – non-packaging
5. contaminated soil.

Most of the waste facilities in the South West region are landfills, including 14 putrescible landfills and one inert landfill. Waste disposal is complemented by six C&D recovery facilities and seven organics recovery facilities. The region recovers significant amounts of C&D waste, with a licensed capacity to process 164,000 tonnes per year. No new infrastructure was identified as currently planned in the region.

Waste transfers out of region were also primarily to the Perth and Peel regions, with dominant material categories being ferrous steel, commingled recycling, and asbestos. The South West region's proximity to Perth and Peel is supported by a strong road network, which allows for opportunities to access reprocessing infrastructure. The region's concentrated population can support additional infrastructure to expand resource recovery activities, such as expanded capacity for local commingled recycling. The commercial port in Bunbury could potentially facilitate access to international recycling markets.

It should be noted that the forestry industry is significant in the region. Forestry waste is not included in the measurement of WA's progress towards waste strategy targets and thus was not included in the modelling undertaken for the infrastructure plan. However, forestry waste currently forms part of the feedstock for some organics waste processors in the region. This may reduce because of the state ban on native forest harvesting beginning in January 2024.

Aspects of waste and resource recovery in the South West in 2020 that must be considered when working towards the waste strategy targets include:

- C&I formed the largest waste material source in the South West region, consisting of about 284,000 tonnes, of which 66 per cent was recovered.
- Of the total waste transferred out of the South West region (predominantly to Perth and Peel), 71 per cent was recovered.
- Forestry waste material was generated (124,000 tonnes) and received (34,000 tonnes) in large quantities, indicating that it forms primary feedstocks for existing organics recovery facilities. The proportion of this coming from native forests (which will be affected by the logging ban), and the impacts of this on existing organics facilities, is unknown.

- Development and operation of waste-to-energy facilities in Perth will have significant impacts on the amount of putrescible waste received into the South West region for disposal to landfill.
- Government policy has established that no new putrescible landfills can be developed in the Swan Coastal Plain because of significant environmental risks and cultural impacts, constraining opportunities to develop new putrescible landfill sites in the South West.

The location of current and planned recovery infrastructure in the South West region in 2020 is shown in Figure 56 (see Facility lists in the Appendix for a full list of facilities). Facilities granted work approvals since 2020 by the department in the South West region are listed below in Table 31. These facilities have not been included in the modelling for the infrastructure plan and may alleviate some of the region's capacity needs.

Table 31 Facilities granted licences or works approvals since 2020 in the South West

Facility type	Facility name	Location
CDS consolidation and pyrolysis plant	Collie Pyrolysis Plant	South West

WASTE FLOWS 2020

SOUTH WEST

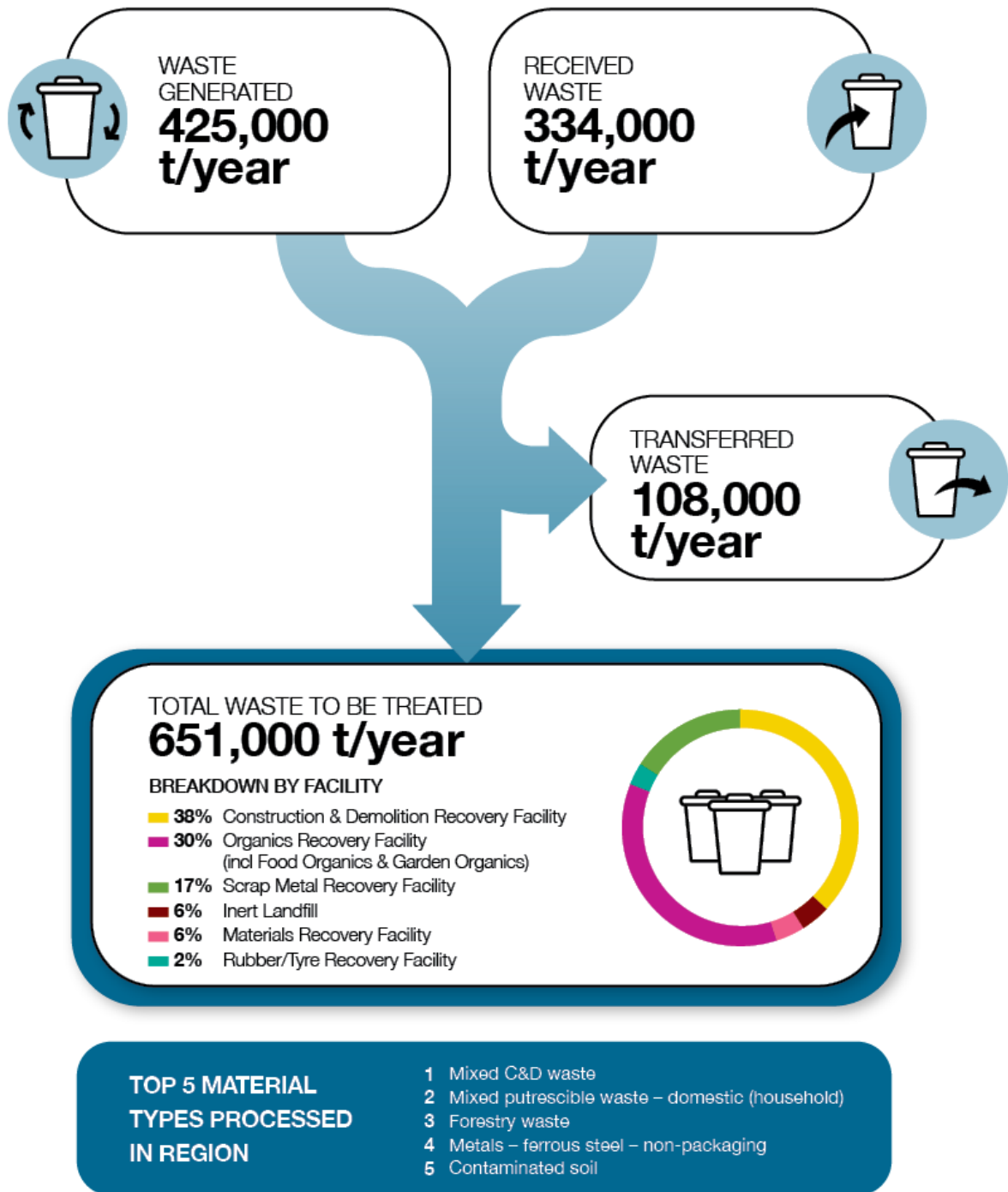


Figure 54 Waste generated, received, transferred and treated in the South West in 2020

WASTE FLOWS 2020 SOUTH WEST

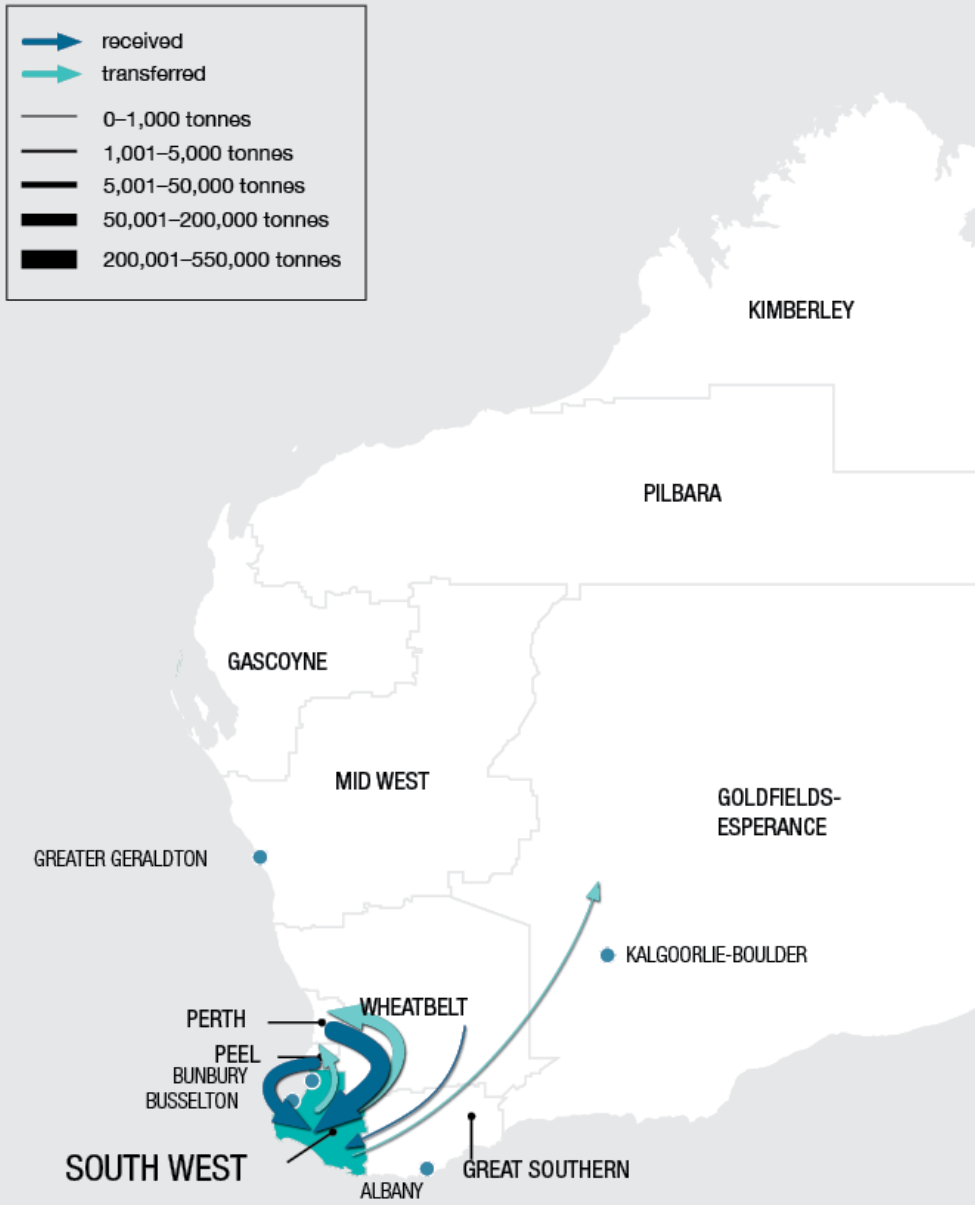


Figure 55 Waste flows in the South West in 2020

CURRENT AND PLANNED INFRASTRUCTURE BY REGION

SOUTH WEST

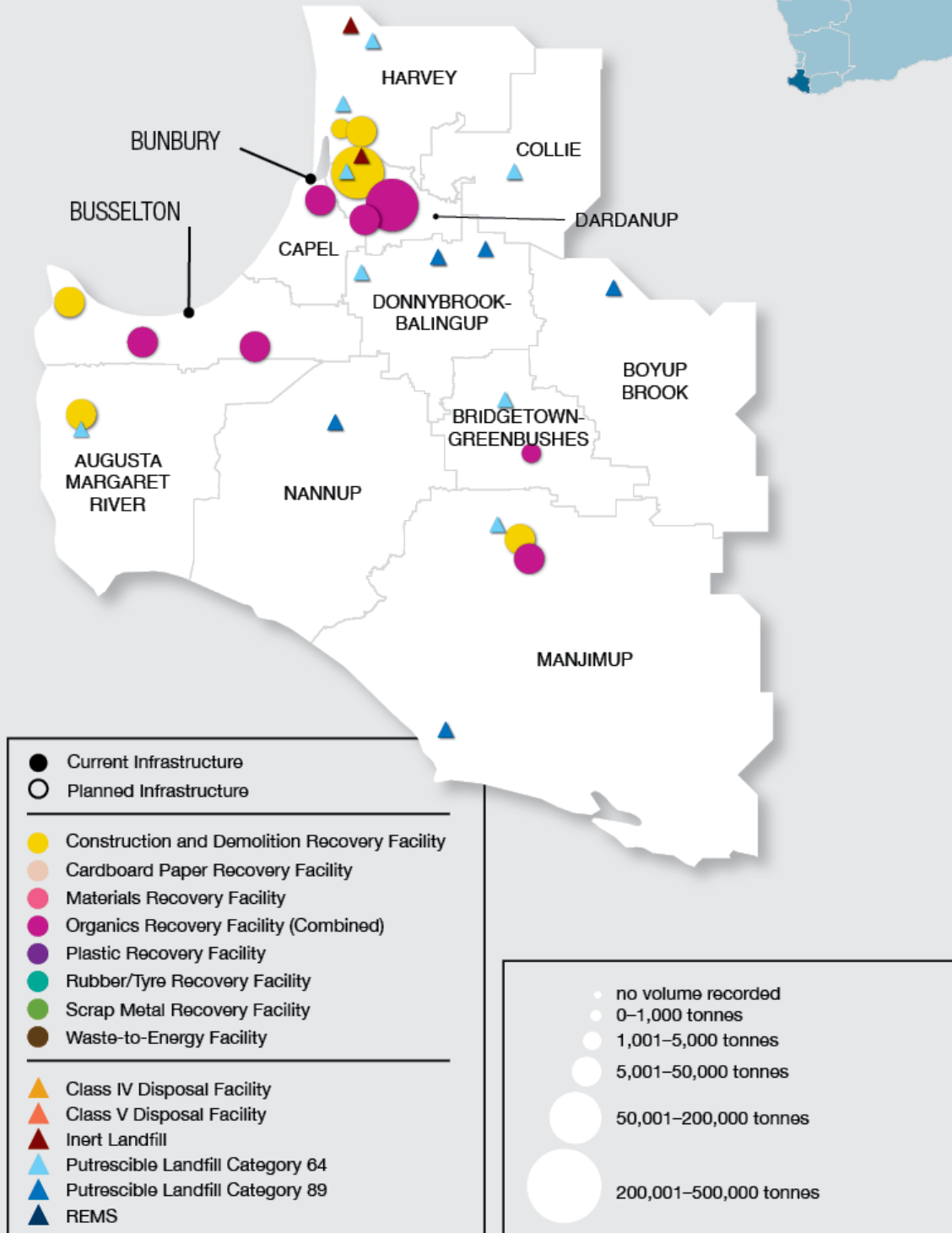


Figure 56 Current and planned infrastructure locations in the South West in 2020

Waste and resource recovery in 2030

Modelling to achieve all waste strategy targets in 2030 found the South West region would generate 467,000 tonnes and transfer 148,000 tonnes out of the region for recovery, both larger quantities of waste compared with 2020.

However, the reduction in putrescible waste imports means the total waste treated in the South West will decrease by about 51 per cent. This shift, along with the addition of new infrastructure, could increase the South West materials recovery rate from 49 per cent to 54 per cent.

Figure 57 highlights the increase from materials recovery (54 per cent) to resource recovery (materials recovery plus energy recovery; 81 per cent), emphasising the increasing importance of energy recovery in waste management.

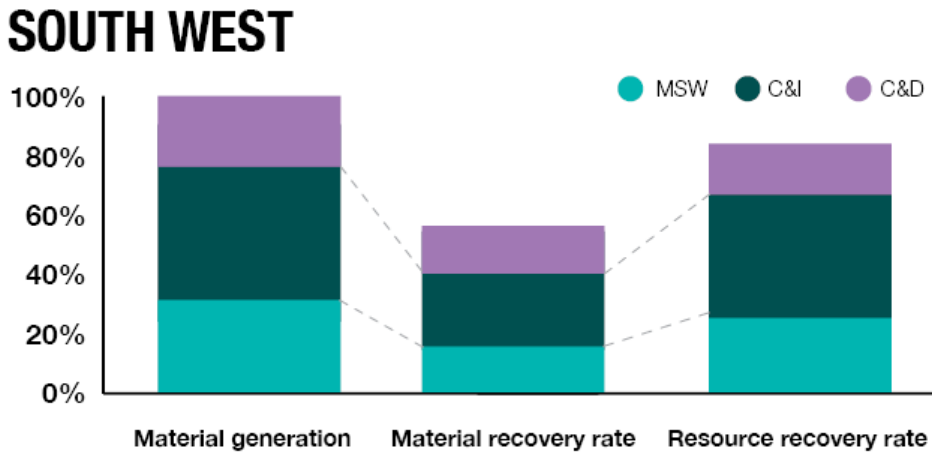


Figure 57 Generation, material recovery and resource recovery by source in the South West in 2030

Figure 58 shows the distribution of feedstock materials used by each facility type, indicating which waste streams are most significant and where the resource recovery efforts should be concentrated. This is also reflected in the South West region Principles and priorities section.

SOUTH WEST

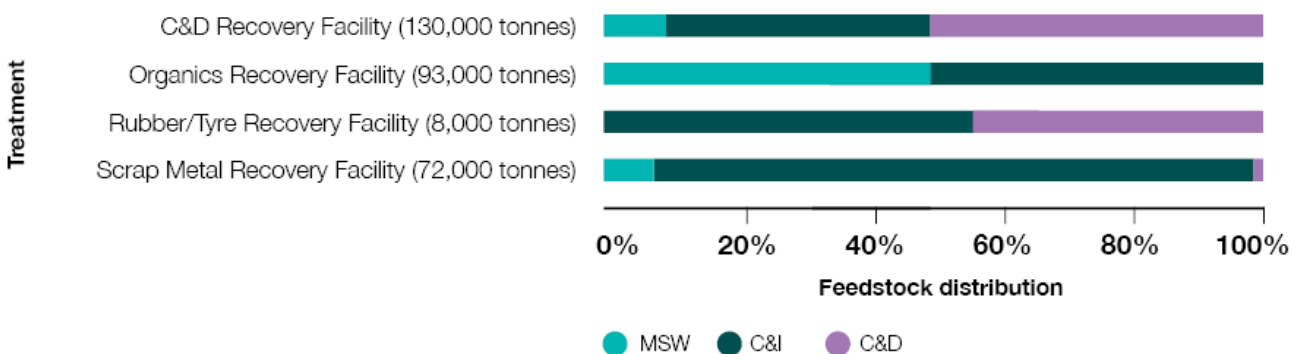


Figure 58 Feedstock distribution of treatments in the South West in 2030

Two South West local governments (the cities of Busselton and Bunbury) are considered major regional centres under the waste strategy. These regional centres are working towards the MSW material recovery target of 60 per cent by 2030. Many South West local governments have already implemented kerbside FOGO collection and recovery (City of Bunbury, shires of Augusta-Margaret River, Capel, Collie, Dardanup, Donnybrook-Balingup and Harvey). Introduction by other governments will further increase demand for local FOGO processing capacity.

The model uses licensed capacity for facilities and can result in an overestimation of actual capacity. Stakeholder feedback indicates that only a fraction of the region's licensed capacity of 205,000 tonnes of Category 67A capacity is actually available for the processing of FOGO. The South West's licensed Category 67A capacity is only in the cities of Busselton and Bunbury. The Infrastructure priorities section describes the need to investigate further to confirm actual FOGO processing capacity.

Infrastructure capacity needs in 2030

Based on current, planned and approved infrastructure in 2020, the South West requires the following additional capacities to meet the waste strategy targets in 2030:

- 64,000 tonnes of additional consolidation capacity is needed for an MRF, which is sufficient to allow for the development of a new recovery facility; however, transferring material to Perth for recovery and access to end markets may be more viable.
- 8,000 tonnes of additional consolidation capacity is needed for rubber/tyre recovery, which may be sufficient to allow for the development of a new recovery facility
- 72,000 tonnes of additional consolidation capacity is needed for scrap metal recovery, which is sufficient to allow for development of a new recovery facility.
- 92,000 tonnes of additional recovery capacity is needed for waste-to-energy, which is not sufficient to allow for a new facility; however, residual waste may potentially be consolidated and transported to Perth for processing. Alternatively, regional growth in the Bunbury and Busselton centres may make development of a South West waste-to-energy facility possible, particularly given the constraints on putrescible landfill capacity in the region. If a waste-to-energy facility is developed, an additional 18,000 tonnes of bottom ash will need to be processed locally or consolidated and transported to Perth.

CAPACITY REMAINING BY LANDFILL TYPE

SOUTH WEST

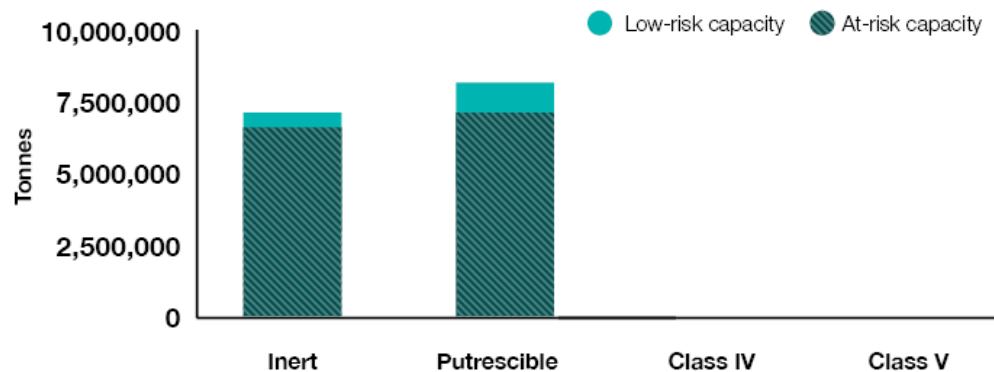


Figure 59 Capacity remaining by landfill type in the South West, including an assessment of low-risk and at-risk capacity

Total remaining capacity by landfill types is presented in . This figure also indicates the proportion of that capacity that is at risk (see section on Landfill capacity lifetime assessment to 2030 and 2050).

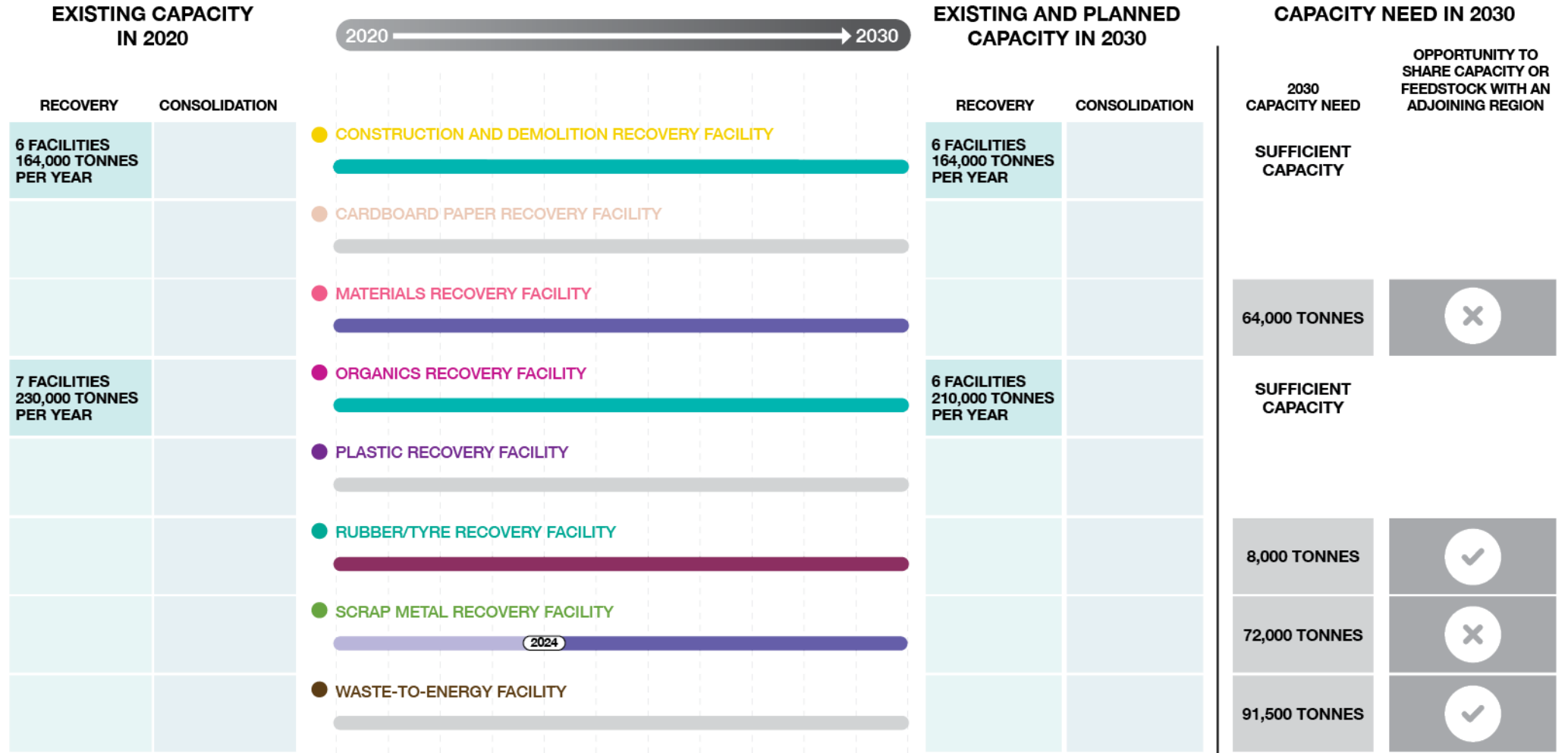
Under the low-risk scenario, most of the total landfill capacity of 15 million tonnes was identified as potentially at risk, of which inert landfills make up 49 per cent and putrescible landfills 51 per cent. *State Waste Infrastructure Needs Analysis* modelling predicts 37,000 tonnes of residual waste will be disposed of in landfill each year. Feedstock lifetime remaining for landfills is shown in Figure 19.

Details of the infrastructure needed to achieve waste strategy targets are outlined in Figure 60, including the expected facilities, capacities and capacity needs in 2030.

CURRENT RECOVERY INFRASTRUCTURE PIPELINE

SOUTH WEST

This overview includes a comparison of projected generation and capacities to determine the infrastructure need in 2030. It includes planned and approved facilities, as well as closures between 2020 and 2030.



Sufficient recovery infrastructure capacity	Recovery infrastructure capacity constraints possible	Recovery infrastructure capacity constraints likely	indicates when capacity constraint changes
Sufficient consolidation infrastructure capacity	Consolidation infrastructure capacity constraints possible	Not needed to achieve waste strategy targets	

Figure 60 South West infrastructure pipeline and capacity need in 2030

Principles and priorities

The principles outlined in this plan have been used to identify priorities.

Priority areas that are projected to go beyond capacity need, based on the completed modelling for the region, arise when applying the principles.

Based on the analysis, the top priorities for the South West region are:

- Investigate designating a waste precinct east of Greater Bunbury.
- Investigate a scrap metal recovery facility.
- Investigate options for a consolidation centre for the transfer of residual waste to waste-to-energy facilities in Perth.
- Investigate alternative landfill facility contingency arrangements with the Great Southern and Wheatbelt regions, and longer-term options within the region.
- Assess whether existing 67A licensed facilities can be increasingly utilised to meet local demand and/or potentially alleviate FOGO recovery capacity need in neighbouring regions.

These are discussed in more detail in Table 32 below. The principles are outlined once more in Figure 2 for reference.

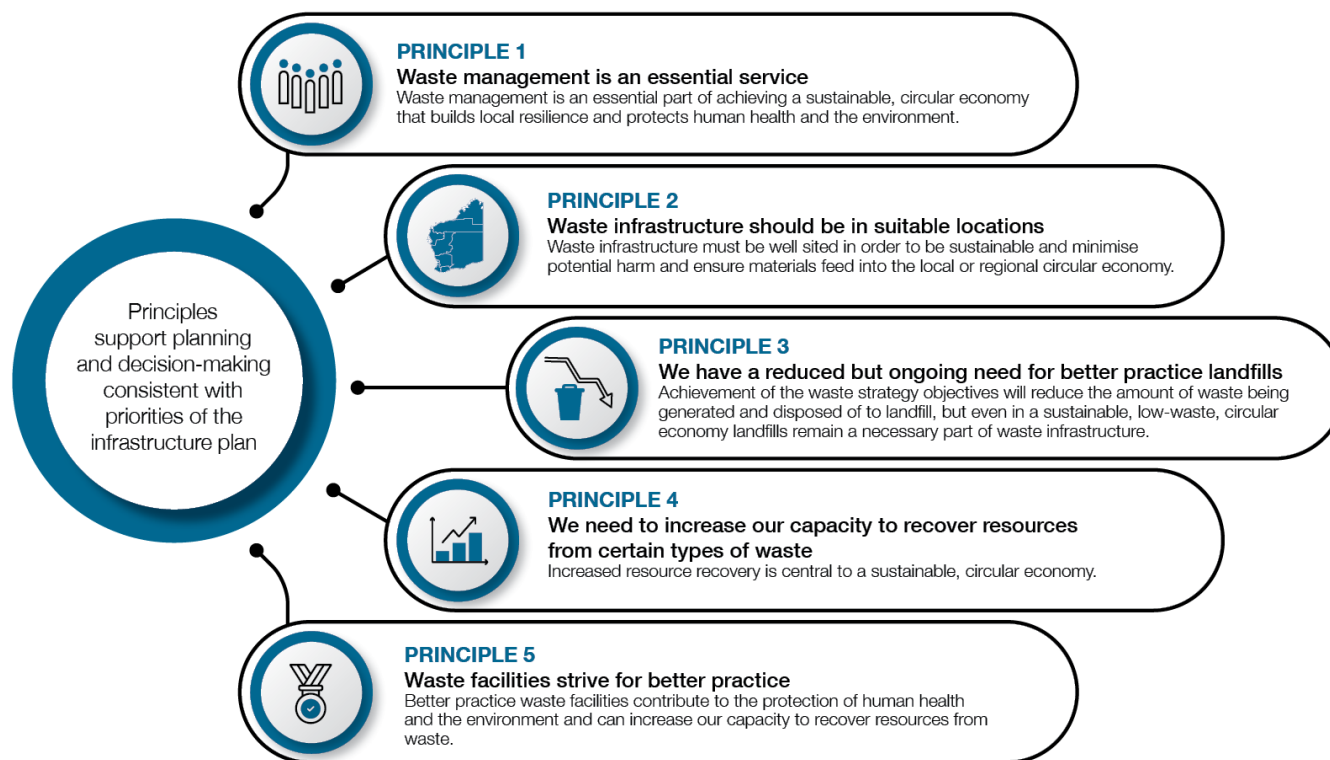


Figure 2 Principles of the State waste infrastructure plan

Table 32 Consideration of infrastructure plan principles and priorities in the South West

Capacity needs to achieve waste strategy targets 2030	Consideration of infrastructure plan principles	Priorities arising from applying principles (with assigned priority ranking)
64,000 tonnes of additional capacity for MRFs	<p>Principle 1: Waste management is an essential service The South West will increase recovery of commingled recyclable material to achieve the waste strategy Recover targets, with an additional 64,000 tonnes of capacity for local commingled recycling capacity needed primarily to support for population centres in the region with existing three-bin collection services. Considering principle 1, development of additional MRFs is viable given the projected available feedstock. The capacity need is sufficient to develop three facilities, which eases contingency risk under principle 1.</p> <p>Principle 2: Waste infrastructure should be in suitable locations Areas east of Greater Bunbury are appropriate for new facilities when considering principle 2, with low constraints and an ability to co-locate with additional scrap metal capacity needs of 72,000 tonnes or rubber/tyre recovery capacity needs of 8,000 tonnes, to achieve the waste strategy 2030 target. Barriers may be faced when developing sites in dense, urban environments as the South West region grows and whole-of-life impacts should be evaluated for any proposed site. This includes accounting for eventual urban encroachment and having suitable buffers which can be addressed with waste precincts.</p> <p>Principle 4: We need to increase our capacity to recover resources from certain types of waste Consideration of principle 4 supports development of facilities in the South West.</p>	<p>High Investigate options for a precinct(s) east of Greater Bunbury to facilitate low-risk development of MRFs co-located with other waste infrastructure.</p>
8,000 tonnes of additional capacity for rubber/tyre recovery	<p>Principle 1: Waste management is an essential service Perth is the closest region with sufficient capacity to receive consolidated rubber/tyre material from the South West, as the current capacity need is not sufficient to allow for a processing facility. However, as urban populations grow in the South West, generation of rubber and tyre material will increase. Critical mass for a new facility may be reached before a consolidation facility is commissioned. Principle 1 outlines the preference for local processing capacity, so development of a processing facility may be feasible in this growing region. The opportunity to co-locate this facility with existing waste infrastructure may reduce planning and approval timeframes, so development of a new facility will be simplified.</p> <p>Principle 2: Waste infrastructure should be in suitable locations Principle 2 prioritises consolidation and transport to the Perth region rather than the Great Southern region to minimise negative impact of transport distances. Whether a</p>	<p>Medium Better understanding of inter-regional opportunities could support the development of new infrastructure to address capacity need for rubber/tyre recovery in the South West region. Options include a waste precinct in the Bunbury area that could facilitate low-risk development of additional consolidation or recovery infrastructure.</p>

Capacity needs to achieve waste strategy targets 2030	Consideration of infrastructure plan principles	Priorities arising from applying principles (with assigned priority ranking)
	<p>consolidation facility or new processing facility, the area east of Bunbury is suitable, with the least constraints and access to downstream markets near Perth.</p> <p>Principle 4: We need to increase our capacity to recover resources from certain types of waste</p> <p>Recent tyre export bans highlight the need to proactively increase capacity to recover rubber/tyre material within the region as the region and population grows, when considering principle 4.</p>	
72,000 tonnes of additional capacity scrap metal recovery	<p>Principle 1: Waste management is an essential service</p> <p>The South West region will need significant additional capacity of 72,000 tonnes to meet the waste strategy Recover targets, with 68,000 tonnes of this being ferrous steel. The region is a major generator and adjoining regions could potentially provide additional feedstock for any new facility in the South West, with 7,000 tonnes available in the Great Southern region and 5,000 tonnes available in the Wheatbelt region. With sufficient feedstock and access to downstream markets, the South West is an appropriate location for an additional processing facility when considering principle 1. However, the contingency risk of a single point of dependency should be addressed by establishing alternative facility agreements with facilities in the Perth region.</p> <p>Principle 2: Waste infrastructure should be in suitable locations</p> <p>Access to facilities or access to downstream markets in Perth make east Bunbury a favourable site with reduced travel distances when considering principle 2.</p>	<p>High</p> <p>Options for waste precinct(s) in Bunbury could facilitate viable development of scrap metal consolidation or recovery facilities. This is a high priority given the immediate capacity need and option to support capacity need in adjoining regions.</p>
91,500 tonnes of additional capacity for waste-to-energy facilities	<p>Principle 1: Waste management is an essential service</p> <p>The South West needs material recovery of an additional 91,500 tonnes per year through waste-to-energy to meet the waste strategy Recover targets in 2030, from a total volume of 135,000 tonnes of residual putrescible waste. This material could be consolidated and transported to Perth to ensure recovery and diversion from landfill under principle 1. It is noted that any delays in commissioning planned waste-to-energy facilities in Perth should be considered and will result in a continued reliance on landfill in the South West.</p> <p>Principle 2: Waste infrastructure should be in suitable locations</p> <p>The construction of a waste-to-energy facility in the region is a potential opportunity, as the region is modelled to generate 135,000 tonnes of residual putrescible waste with the highest growth around the major regional centres of Bunbury and Busselton. If this proceeds, a local bottom ash recovery facility in the region may be feasible.</p>	<p>Medium</p> <p>Increasing waste-to-energy capacity in the South West region through the development of additional infrastructure would improve the region's progress towards waste strategy Recover and Protect targets, while providing additional contingency to facilities in Perth.</p> <p>High</p>

Capacity needs to achieve waste strategy targets 2030	Consideration of infrastructure plan principles	Priorities arising from applying principles (with assigned priority ranking)
	<p>If a waste-to-energy facility is developed (or waste is transferred to waste-to-energy facilities in Perth), waste-to-energy bottom ash facility development will be critical to waste-to-energy material recovery and meeting the waste strategy 2030 targets, with the South West needing an additional 18,000 tonnes of capacity for bottom ash recovery. Considering the plans to develop bottom ash recovery facilities in Perth, application of principle 2 promotes consolidation and transport of bottom ash material to Perth, with insufficient feedstock for a facility in the South West region.</p>	<p>Consolidation infrastructure in Bunbury could facilitate efficient transfers to waste-to-energy infrastructure in southern Perth to decrease reliance on local landfill capacity.</p>
<p>Large volume of organics allows for development of other processes</p>	<p>Principle 2: Waste infrastructure should be in suitable locations Development of bioenergy infrastructure could be located where organics are being processed as an additional option to treat suitable organics, to expand capacity or to diversify outputs (expanding from compost to energy production). This may present an opportunity for the Wheatbelt to treat organic waste or FOGO waste that exceeds the treatment capacity of the region.</p> <p>Principle 4: We need to increase our capacity to recover resources from certain types of waste To achieve waste strategy targets, Western Australia needs to recover and process a large volume of organics. Expanding infrastructure to develop facilities that produce bioenergy expands capacity, diversifies options and reduces risk of failure to meet waste strategy targets.</p> <p>Principle 5: Waste facilities strive for better practice As volumes of organics are captured by large facilities in the region, there is potential to develop other processes. Better practice guidelines or regulatory requirements may change market activities and present an opportunity to utilise bioenergy more in the South West.</p>	<p>Medium Two facilities are listed in the region with capacities of 120,000 and 50,000 tonnes/year. These larger existing facilities may consider options to implement other processes or technologies.</p>
<p>Used tyre storage</p>	<p>Principle 1: Waste management is an essential service About 8,000 tonnes of rubber/tyre material is generated in the South West and this will continue to be generated. Consolidation of this material for processing in other regions is necessary whilst it remains unviable to process within the region.</p> <p>Principle 2: Waste infrastructure should be in suitable locations Although tyre material processing may be near end markets that can take crumbed tyres or use recovered materials in manufacturing or construction, consolidation centres will be needed in remote or regional locations.</p>	<p>Medium No facilities exist in the South West for tyre processing or storage. There is an opportunity to consolidate volumes and transport these tyres for reprocessing outside the region.</p>

Capacity needs to achieve waste strategy targets 2030	Consideration of infrastructure plan principles	Priorities arising from applying principles (with assigned priority ranking)
	<p>Principle 4: We need to increase our capacity to recover resources from certain types of waste</p> <p>Tyres can be processed, but infrastructure may only be available in Perth so the recovery of rubber/tyre materials in the South West region is dependent on consolidation and transport to enable recovery. Consolidation and transport will remain the likely fate given the insufficient quantity to support regional processing.</p>	
Landfill capacity risk assessment	<p>Principle 2: Waste infrastructure should be in suitable locations</p> <p>Based on current, planned and approved landfill capacity, the South West region has sufficient landfill capacity to 2030. However, under a low-risk approach to landfill, 93 per cent of that capacity is considered at risk. The South West needs immediate additional capacity to provide adequate options for putrescible waste disposal. Diversion of material to the adjoining Perth, Great Southern and Wheatbelt regions may address capacity constraints in the short term but may not be a suitable long-term approach.</p> <p>Principle 5: Waste facilities strive for better practice</p> <p>Consideration of principle 5 highlights that seven facilities have a total potential lifetime capacity of 7,900,000 tonnes at risk in the South West region. The South West region is likely to face capacity constraints for landfill under a low-risk approach to landfill. In addition, 44 per cent of landfills also require post-closure planning, having not completed or updated a plan within the past 10 years.⁵</p>	<p>High</p> <p>Options for more efficient inter-regional waste transfer infrastructure and contingency arrangement could alleviate short-term capacity constraints between the South West, Great Southern and Wheatbelt regions. This is a high priority given the likelihood of short-term capacity constraints under a low-risk approach to landfill capacity.</p>

⁵ Western Australia Waste Infrastructure Audit, ASK Waste Management Consultancy Services on behalf of the Department of Water and Environmental Regulation, (2021).