Waste Authority

Your Say | Waste WA

DRAFT

Waste Strategy for Western Australia

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CONTENTS

1 Introduction to the strategy and why we need it

This draft strategy has been prepared by the Waste Authority of Western Australia to plot a forward path for the management of waste over the coming decade. The Waste Strategy aims to create an environment which encourages waste avoidance, resource recovery and responsible disposal of that portion of the waste stream for which it is currently unsustainable to achieve effective recovery.

This document provides the strategic approach for future waste management. Once adopted, the Waste Authority's business plan, developed on the basis of the Strategy, will identify specific actions to enable the strategic objectives to be met.

The quantity of waste generated in Western Australia is steadily growing, a trend that is predicted to continue. As our population grows and our standard of living increases, we consume more materials and produce more waste. Currently, 25% of Western Australia's total waste is recycled. While the environmental and social benefits of higher rates of recycling are well established, the waste industry, like all sections of the economy, is challenged by future carbon constraints and the current global economic downturn. These are challenges for the State as a whole.

While there has been a significant improvement in the standard of management of landfills in the metropolitan area, in areas of smaller population, however, many of the landfill sites no longer meet community expectations.

These problems can be addressed, but a coordinated and strategic approach is needed. The enactment of the *Waste Avoidance and Resource Recovery Act* in 2007 foreshadowed this approach. The Act established the Waste Authority and required it to develop a long term Waste Strategy for Western Australia. The strategy is obliged to plan for continuous improvement of waste services, waste avoidance and resource recovery, benchmarked against best practice. It must set whole of state targets for waste reduction, resource recovery and the diversion of waste from landfill disposal.

What do we mean by 'waste'? *Box 1*

For the purpose of this strategy, waste refers to solid materials discarded from households, including both green waste and other household organics, local government generated green waste, businesses and construction and demolition sites. It includes hazardous wastes. It does not include nuclear waste, mining spoil or agricultural residues.

This draft strategy builds on substantial earlier work to reduce waste and its environmental impacts, including the 2005 *Extended Producer Responsibility Policy Statement*, the 2004 *Statement of Strategic Direction for Waste Management in Western Australia*, the 2001 *Towards Zero Waste* action plan and the 2007 *Stakeholder Advisory Group Investigation into Best Practice Container Deposit Systems for Western Australia.*

The draft strategy provides a forward looking approach for coordinating the efforts of state and local government, the waste industry and other involved groups in delivering wise management of waste across the state. It aims to work collaboratively with the Commonwealth government, its activities and programs and it also provides a context for the further development of strategic waste minimisation by regional groupings of local governments.

The strategy process

The draft strategy was developed by the Waste Authority with the assistance of Hyder Consulting and Encycle Consulting. Two rounds of consultation were undertaken in developing the draft. Firstly, a targeted interview program took place in December 2008 and January 2009 in which selected stakeholders helped to identify issues and potential directions. Shortly afterwards a workshop with a larger group of stakeholders was held to obtain views on identified issues. This draft document is now subsequently released and public submissions on its contents are now sought.

Once all submissions have been considered, the Waste Authority will update the draft strategy and will refer the modified draft and a summary of all submissions to all submitters and to those stakeholders who attended the strategy development workshop in January 2009. These respondents will have a further opportunity to comment and provide requests for changes to the modified draft.

The Waste Authority will then submit the modified draft Waste Strategy to the Minister for the Environment for consideration together with a copy of all submissions and requests, and a report on how they were taken into account. The Waste Strategy will be finalised after the Minister's approval is published in the Government Gazette.

Once a Waste Strategy for Western Australia is approved, the focus will shift to implementation. Waste in WA will need to be managed in accordance with the strategy, which will be implemented in partnership between state government, local government, the waste and resource recovery industry, businesses and the broader community. The priorities and approaches set out within the strategy will be progressively addressed. The Waste Authority will coordinate the implementation of the Waste Strategy through its business planning process. The Authority will report on progress against the aims and targets of the strategy.

Invitation to comment

The Waste Strategy will be an important document for the future management of waste and the environment in Western Australia. Everyone has a role in implementing the strategy.

The Waste Authority invites you to contribute to the development of the Waste Strategy by commenting on this draft.

The official community consultation website will be up and running from 1 October 2009, where electronic submissions can be made. In addition, workshops and focus groups will be held across the state throughout October and November 2009. At these events stakeholders can provide comments and feedback on the strategy.

Details about the workshops and other consultation activities can be obtained from the community consultation website from 1 October 2009, or by telephoning 08 6467 5522.

Participate by submission in writing:	Your Say Waste WA Locked Bag 43 Cloisters Square Perth WA 6850
Participate electronically through the website (from 1 October 2009 to 10 December 2009):	www.yoursaywastewa.com.au At our official consultation web site you can lodge your electronic submissions, as well as discuss and comment on the strategy.
Email (from 1 October 2009):	HaveYourSay@yoursaywastewa.com.au

Please note that submissions must be received by 10 December 2009.

2 Waste in Western Australia

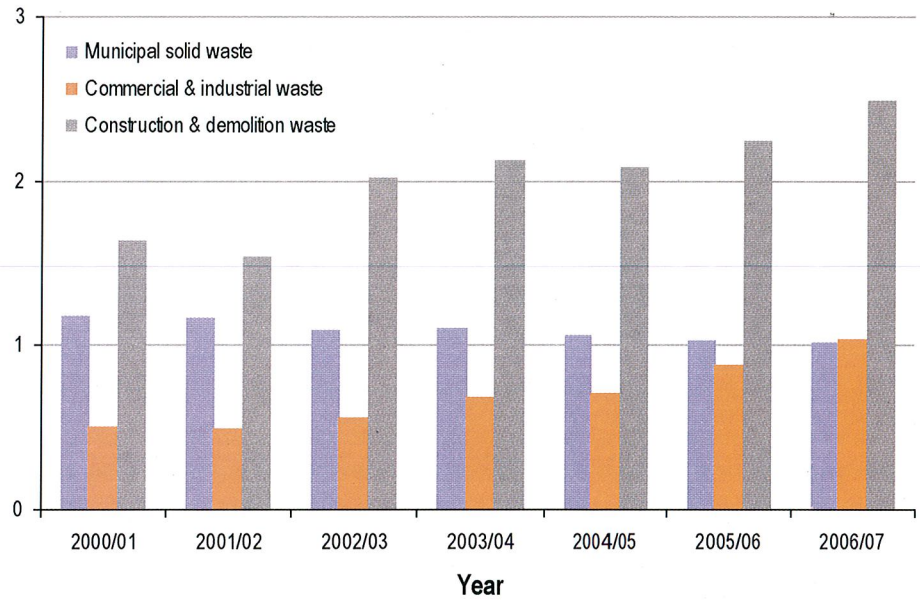
Before setting out a new strategy for managing waste it is important to have a good understanding of the current situation. This section provides an overview of waste data and trends, current infrastructure and waste management responsibilities.

Waste data and trends[1]

The quantity of total waste generated in WA (i.e. waste disposed to landfill and recycled) has risen markedly in recent years, mainly due to a rapid increase in waste from the commercial and industrial sector and from construction and demolition activities. The increase reflects the historic boom in commodity prices. Between 2005/06 and 2006/07 alone, these waste streams grew by around 10% to 4.5 million tonnes. Waste generation from households, on the other hand, has remained relatively stable, increasing only a few percent between 2000/01 and 2006/07 to reach 1.35 million tonnes per year.

Around 75% (by weight) of total wastes are disposed of as landfill material. Waste to landfill in Western Australia increased by almost 40% in the seven years to 2006/07, mainly due to growth in the commercial and industrial and the construction and demolition sectors (see Figure 1).

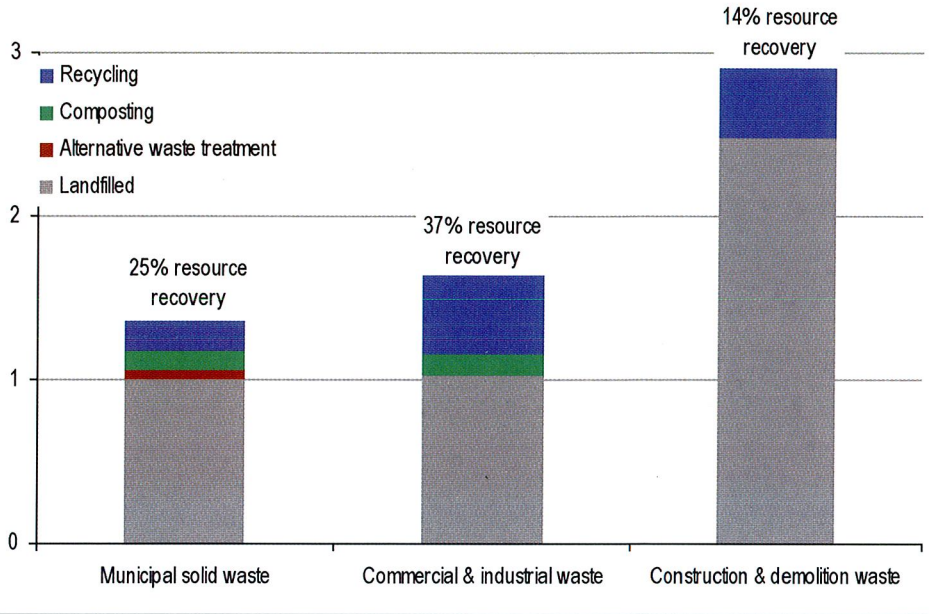
Figure 1 Trends in waste to landfill in WA



The fate of the three major streams is shown in Figure 2. It shows that the construction and demolition sector is the largest contributor of waste to landfill and has the lowest recycling rate.

[1]All data in this section are from waste data provided by the Department of Environment and Conservation. The estimates of state-wide landfill disposal figures are based on reliable data for the metropolitan area and an extrapolation to the non-metropolitan area, based on economic activity.

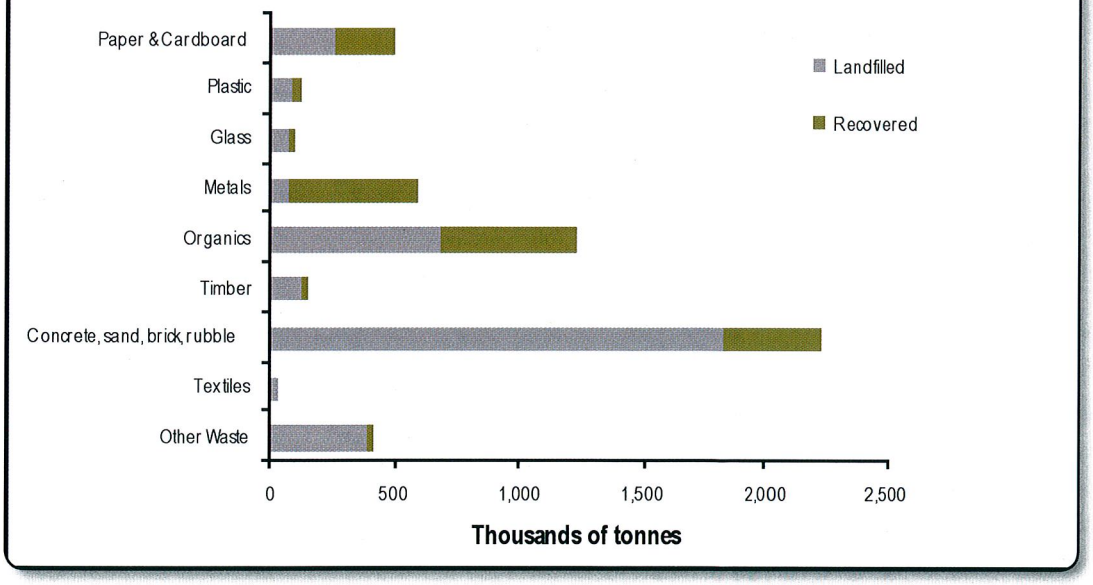
Figure 2 Waste management routes by sector 2006/07



Across these three streams, the overall recycling rate is 25%. This comparatively low rate (compared to other states) is partly due to the large distances involved in bringing recovered materials to markets. However, many opportunities are available for increasing recycling rates. Figure 3 shows estimated recycling rates by material in 2006/07[2].

Large quantities of recyclable materials such as concrete, paper and plastic are currently sent to landfill. Glass has the potential to cause problems in some waste management processes, such as causing accelerated wear on machinery and devaluing the compost produced by alternative waste treatment facilities.

Figure 3 Estimated landfill disposal and recycling by material, 2006/07



[2] Hyder Consulting (2008) Waste and recycling in Australia. Prepared for the Commonwealth Department of the Environment, Water, Heritage and the Arts

In addition to these major waste streams, a smaller quantity of hazardous waste is generated. Hazardous wastes have physical, chemical or other properties that make them an environmental or health hazard. The major hazardous waste streams include clinical wastes, contaminated soils and household wastes, such as oil, paint, household cleaners and batteries.

Waste and resource recovery infrastructure

A crucial underpinning of modern waste management is the infrastructure needed for its collection, handling, processing and disposal. Waste infrastructure is expensive and is usually established by municipal authorities, even though private companies generate most of the material inputs. While waste infrastructure is essential, siting is often the subject of 'not in my backyard' disputes. In this section we review the asset base of waste and resource recovery infrastructure in WA.

Perth

A 2008 assessment[3] found that overall, Perth has adequate waste infrastructure for its needs towards 2020. However, potential strains on waste infrastructure will become apparent in certain geographic areas over the next 10 years unless there is planning or efforts to boost the recycling rate.

The network of transfer stations is adequate and well distributed, and demand for landfill can be met through current and planned future sites on the urban fringe. Standards of management and engineering at metropolitan landfills are generally good. The facilities for sorting and managing recyclables are limited, however, contributing to unnecessarily high levels of recyclable material being sent to landfill. There are plans for additional materials recovery facilities, but the recent fall in commodity prices could undermine the financial viability of these plans. Companies that accept recycled materials typically have the capacity to receive greater volumes of materials, but some recycling infrastructure has closed in Perth due to limited market scale. This problem has undermined paper, cardboard, plastic and glass recycling.

In recent years, several alternative waste treatment facilities have been established in Perth to pre-treat municipal solid waste and recover materials prior to disposal to landfill. These facilities have contributed to improved recycling, improved diversion from landfill, and improved management of greenhouse gases. As with all waste management facilities there is a potential issue of interaction between the facilities and neighbours which requires careful planning and careful management.

Recent temporary closures of some waste management infrastructure in Perth resulted in a number of incidents where recyclable materials were landfilled. The risk of this recurring in future will be reduced by the adoption of contingency arrangements and by plans for additional materials recovery facilities.

Regional WA

Almost every small town in rural Western Australia has its own landfill, mostly operated by the local council. Many of these are unlined, so that leachate can leak into the environment. Methane, a powerful greenhouse gas that arises from decaying organic wastes, is not collected and so vents into the atmosphere. In smaller settlements, landfills are often unattended, leading to increased risk of fires and dumping of inappropriate materials. In mining settlements general waste is sometimes managed in conjunction with spoil. In some remote aboriginal settlements there is no organised waste management at all.

A 2005 study examined recycling infrastructure in regional WA[4]. It found that over half of the 110 local governments in regional WA recover traditional recyclable materials, mostly via drop-off recycling facilities. Kerbside recycling is well established in the south-west of the State where higher population densities and proximity to markets in Perth improve commercial viability. Sorting infrastructure in regional WA is sparse. There are materials recovery facilities in Albany, Bunbury and Mandurah and small-scale sorting at Broome, Esperance, Newman and Wickepin. Rural sorting often relies on volunteer manual labour. Low-cost baling machines are often used for compacting aluminium, paper, cardboard and plastics in order to improve transport efficiencies.

[3] Cardno (WA) Pty Ltd (2008) Assessment of waste disposal and material recovery infrastructure for Perth - Towards 2020, prepared for the Waste Authority
[4] BSD / Meinhardt (2005) Kerbside recycling: exploring regional transport economics. Prepared for the Department of Environment, Perth.

There is an issue relating to effective waste management in remote communities, especially remote indigenous communities, where waste management is at a very basic level, litter is a significant problem and the impacts of these on both the environment and public health are of concern.

Waste management responsibilities

A network of organisations and groups share responsibility for the management of waste. Their roles are summarised below.

The Waste Authority

"The Waste Authority is established by the *Waste Avoidance and Resource Recovery Act 2007* with various non-regulatory functions and powers including:

- strategic policy and planning for the transition towards zero waste to landfill in Western Australia;
- the implementation of policies, plans and programs to achieve that transition;
- the administration of allocated funds raised through the collection of the landfill levy."[5]

Department of Environment and Conservation

The Department of Environment and Conservation is responsible for regulatory, compliance and enforcement functions in relation to waste.

Environmental Protection Authority (EPA)

The EPA's functions include development of environmental protection policies and considering proposals for waste treatment facilities with the potential to have a significant environmental effect.

Local government

Local governments have a primary role in managing municipal waste and informing residents and ratepayers about waste management and recycling. Councils also develop and operate much of waste infrastructure.

Regional Councils

Regional Councils are formal groups of local governments that aim to provide services, including sustainable waste management, for member councils' communities. The groups are established under the *Local Government Act 1995*. Across Western Australia, there are seven Regional Councils established to deal with waste, five of which cover metropolitan Perth.

Municipal Waste Advisory Council

The Municipal Waste Advisory Council is a standing committee of the Western Australian Local Government Association which is actively involved in advocacy and program delivery for local government in the area of waste management.

Waste and resource recovery industry

The waste and resource recovery industry provides privately funded collection, sorting, reprocessing and disposal services.

Waste generators

Waste generators, including businesses and householders, are responsible for proper management of waste through their use of recycling and disposal systems.

[5]Explanatory Memoranda for the Waste Avoidance and Resource Recovery Bill 2007, available online http://www.austlii.edu.au/au/legis/wa/bill_em/waarrb2007374/waarrb2007374.html, accessed 25/02/2009.

3 Values, aim, principles and objectives

This section provides the context for developing and interpreting the Waste Strategy. The principles and objectives set out below will be applied to the three areas of waste management that the strategy can influence, that is: waste avoidance; resource recovery; and disposal.

Values

The Waste Strategy has been developed, with the following values in mind:

- **Sustainability**
  Seeking an appropriate balance between social, environmental and financial considerations.
- **Resource efficiency**
  Increasing the unit output from resources such as water or energy.
- **Community empowerment**
  Providing the community with an active role to play in purchasing, using or disposing of a material.
- **Innovation**
  Finding better approaches for Western Australia.
- **Community acceptance**
  Achieving community support.
- **Simplicity**
  Reducing the complexity of approaches to waste avoidance and resource recovery.

Aim

The aim of the Waste Strategy is to drive a decade of significant improvement in the management of waste in Western Australia.

Principles

This will be achieved by applying the following principles:

- Promoting the most efficient use of resources, including resource recovery and waste avoidance;
- Reducing environmental harm including pollution through waste;
- Consideration of resource management options against the following waste management hierarchy -
    - (i) avoidance of unnecessary resource consumption;
    - (ii) resource recovery (including reuse, reprocessing, recycling or energy recovery);
    - (iii) disposal[6].
- Identifying and supporting solutions that offer the best value for money when social, environmental and financial considerations are taken into account;
- Application of both the 'polluter pays' and the 'user pays' principles where appropriate;
- Pursuit of continuous improvement;
- Favouring mechanisms which can achieve the desired outcomes with minimal central control over how these are achieved.

Strategic objectives

- Cooperation between commonwealth, state and local governments, the waste and resource recovery industry, producers and the community;
- Increasing the responsibility of producers for the management of waste associated with their products through adoption of product stewardship and extended producer responsibility initiatives;
- Reducing greenhouse gas emissions through a focus on resource efficiency and improved management of emissions from landfills;
- Improving the valuation of environmental and social benefits;
- Development and adoption of best practice strategies;
- Making the pricing of waste-related services better reflect this Strategy's priorities.

[6] See section 5(1) of the Waste Avoidance and Resource Recovery Act 2007.

4 Waste avoidance

Under the waste management hierarchy, waste avoidance is the highest order priority. The more we can reduce the creation of waste and the more efficient we can be in our use of resources, the more we can reduce our reliance on waste disposal.

A major way in which the State can influence waste avoidance is through engagement with the Commonwealth and its programs and to work collaboratively to design, develop and implement waste avoidance strategies, including those that affect imported products.

Challenges, needs and priorities

Waste avoidance is about redesigning products and how they are made so that waste is not created. It is also about what and how much we consume. Much of the product that is consumed in Western Australia is packaged before import to the state. Therefore there is a dual challenge of reducing the creation of waste for products manufactured in Western Australia, but also taking action for imported products. This latter will require either action or empowerment from the Commonwealth Government who has the relevant powers.

There is a need for producers to design products and services with a view to minimising end-of-life waste, and to adopt cleaner production processes. This is especially the case for hazardous and problem wastes (See Box 6 for example). Product stewardship is one of the ways of doing this. The priority is to promote the ethos of waste avoidance and resource efficiency and to encourage consumers and businesses to choose low- waste products and services.

Waste avoidance target *Box 2*

1. Reduce the quantity of waste generated per capita over the life of the strategy below the 2006/07 rate of <<FIGURE TO BE DETERMINED>> tonnes per person. (See Question 1.)

Questions for Consideration

1. What do you think should be the figure for the Strategy's waste avoidance target (see Box 2)?

Strategies

Product stewardship	Target Date
The Waste Authority will assist industry associations and local manufacturers to develop product stewardship schemes for priority products (refer to Box 5).	
The State Government will work with the Commonwealth Government to influence waste generation from imported products.	
The State Government will participate in the Environment Protection and Heritage Council to progress national product stewardship schemes to address priority products.	
Community engagement	
The Waste Authority will support community engagement and behaviour change programs that focus on waste avoidance.	
Regional planning	
Regional Councils and other local government groupings will develop and implement Strategic Waste Management Plans that include measures addressing waste avoidance.	
Government leading by example	
The Department of Environment and Conservation will assist the Department of Treasury and Finance to ensure that waste avoidance is incorporated as part of WA Government procurement policies and practices.	

5 Resource recovery

Resource recovery means finding uses for waste by way of reuse, reprocessing, recycling or energy recovery. This may occur through separation of recoverable materials at source or through waste treatment facilities.

The environmental benefits of resource recovery are well established, and arise from offsetting the use of virgin resources as well as from reduced waste disposal. The benefits include conserved resources and landfill space, reduced greenhouse gas emissions, less air pollution and water savings.

Challenges, needs and priorities

The challenge is to increase resource recovery despite unstable commodity prices, increasingly complex waste materials and often large distances to reprocessing markets. At the household level, kerbside recycling has generally been embraced as a community norm. However, more materials can be beneficially recovered. Outside the home, waste generators have not embraced recycling to the same extent and still send large amounts of recoverable materials to landfill. Increasing resource recovery from commercial, industrial, construction and demolition wastes is a significant challenge.

The development of local markets for recovered materials is essential for increasing resource recovery. Stable markets for recovered materials underpin private investment in recovery infrastructure.

Resource recovery targets *Box 3*

2. In metropolitan Perth at least a 70% recovery rate for municipal waste by 2015. (up from approximately 45%).

3. In non metropolitan regional centres with a population greater than 25,000 (see Box 4) at least a 45% recovery rate for municipal waste by 2015.

4. The contamination rate of kerbside recyclables collections will be reduced from approximately 25% to 10% by 2015.

5. The recovery rate for construction and demolition waste will be increased from 14% in 2006/07 to 50% by 2015 and to 70% by 2019.

6. The recovery rate for commercial and industrial waste will continuously increase over the lifespan of the strategy. At least one facility for processing commercial and industrial waste will be established by 2015 and a second by 2019.

Questions for Consideration

2. What do you think of these targets (see Box 3)?
2a. Are they sufficient? 2b. Do you think they are achievable?
3. What steps do you think need to be taken to achieve them?

The continued development of resource recovery infrastructure and technologies is a priority, particularly for larger non-metropolitan centres (see Box 4).

In respect of certain product wastes, product stewardship and extended producer responsibility will be key tools in improving resource recovery (see Box 5). The Authority believes that there should be a direct charge on purchases of new products, such as an advance recycling fee to generate funds for the management of wastes identified as either problematic or priority wastes. An advance recycling fee is a charge that is included in the purchase price of the product in order to provide funds for appropriate management of the product after it has been used. Where the material supplier has their own effective EPR scheme they should be released from the need to make payment. A container deposit system is one type of advance recycling fee which the Authority has supported in relation to containers.

The introduction of incentives, including economic signals, to encourage more resource recovery from the non-household sector is another priority.

High contamination rates in kerbside recyclable materials undermine the viability of recycling. The contaminant materials must be separated and disposed of, and those that are not separated reduce the value of the recycled product. Contamination rates need to be kept low.

Regional centres *Box 4*

Strategy targets 3 and 8 apply to regional centres with populations above 25,000. In 2009 these include:

- **Albany region**
- **Avon region**
- **Bunbury / Busselton region**
- **Geraldton region**
- **Kalgoorlie region**
- **Mandurah region**

Product stewardship *Box 5*

Product stewardship occurs when industry maintains some responsibility for the post-consumption management of its products. An example of a product stewardship scheme is the National Packaging Covenant. Extended producer responsibility is a product stewardship approach in which industry is made to be responsible, physically or financially, for the management of their products at end-of-life.

The idea of product stewardship is to encourage industry to consider waste management issues in the design of its products and to prevent cost shifting from product users to general ratepayers. Western Australia recognises that product stewardship is best implemented at the national level and supports Commonwealth initiatives in this area. Where appropriate, however, the State Government will introduce product stewardship initiatives of its own.

The following materials or material groups are priorities for the product stewardship schemes, based on an assessment of the potential for improving recovery rates in an environmentally responsible way. Other products may be deemed priorities in future if recovery levels or waste management risks are considered unsatisfactory.

- packaging and containers
- glass
- domestic hazardous materials and products containing hazardous materials, including chemicals, paint, fluorescent lights and batteries
- electronic waste
- tyres
- mattresses
- waste oil

Product stewardship schemes should be led by industry with government support where required. If continuous improvement is not evident in the recovery rate or management of environmental risk of any priority product by 2011, then the Waste Authority will seek to establish an extended producer responsibility scheme.

Strategies

Market development	**Target Date**
The Waste Authority will seek to identify barriers to and opportunities for viable markets for recovered materials by commissioning or providing grants for research, development and demonstration projects.	
The Waste Authority will work with the Department of Treasury and Finance and government agencies including Main Roads Western Australia, and local government to identify and promote potential uses for recovered materials such as concrete, glass, organics and used oil. If this is not effective, the Waste Authority will propose regulations to achieve this.	Established by mid-2010
Infrastructure development	
The Waste Authority will assist in the establishment of alternative waste treatment facilities in non-metropolitan regional centres with population catchments exceeding 25,000 (see Box 4).	
The Waste Authority will assist in the establishment of appropriate recovery-focused waste infrastructure in other parts of Western Australia.	
Product stewardship	
The Waste Authority will assist industry associations and local manufacturers to develop product stewardship schemes for priority products and materials (refer to Box 5).	
The Waste Authority will review Western Australia's involvement with the National Packaging Covenant and provide recommendations to the Minister.	
The State Government will participate in the Environment Protection and Heritage Council to progress national product stewardship schemes to address priority products.	
The Waste Authority will review recovery levels and waste management risks for products, including the priority products (see Box 5), to inform the need for the introduction of extended producer responsibility initiatives and provide recommendations to the Minister.	Completed by 2011
The Waste Authority will support the introduction and operation of systems of advance recycling fees, and specifically would support the introduction of a container deposit system.	

Recycling	Target Date
The Waste Authority will continue to work with local government to optimise the diversion of green waste and organic waste from landfill.	
The Waste Authority will encourage recycling at major events.	
The Waste Authority will work with recycling service providers and the building, construction and demolition industry to implement recycling programs targeting small to medium enterprises, to increase recycling from this sector.	Established by mid-2011
Community engagement	
The Waste Authority will assist local government to conduct community engagement and behaviour change programs that encourage householders to increase recycling and source separated composting (including home composting) and to reduce contamination of kerbside recyclables.	
The Waste Authority will assist industry to conduct community engagement and behaviour change programs that encourage businesses to increase recycling and other forms of recovery.	
The Waste Authority will provide support for initiatives, such as the Waste Wise Schools program, that develop basic knowledge and understanding of waste management among school students.	
Regulation	
The Authority will provide advice, based on research, on factors that should be considered in determining any changes to the landfill levies.	
The Waste Authority will consider recommending a ban on the disposal of municipal waste that has not been pre-processed for resource recovery prior to disposal to landfill. This could be applied in Perth and/or any of the non metropolitan regional centres listed in Box 4.	
The Waste Authority will work with other government agencies to introduce requirements for property developers to implement resource recovery and waste management plans for waste arising from construction and demolition projects.	Established by mid-2010
Regional planning	
Regional Councils and other local government groupings will develop and implement Strategic Waste Management Plans that include measures to increase resource recovery.	
The Waste Authority in collaboration with the Departments of Planning, Local Government and Heritage and Regional Development and Lands will develop a state-wide planning framework for the provision and siting of resource recovery, including composting, infrastructure. The framework will include contingency planning for the recovery of waste generated from major population centres.	
Government leading by example	
The Department of Environment and Conservation will assist the Department of Treasury and Finance to ensure that the purchase of recycled content products is incorporated into WA Government procurement policies and practices.	Established by mid-2010
All State Government agencies will be encouraged to establish waste management plans encompassing targets for resource recovery and waste avoidance.	Established by 2011

Questions for Consideration

4. What target dates do you think should be applied to these strategies?

5. What factors do you think should be considered when setting the landfill levy?

6. How do you think the Authority should weight these different factors?

6 Disposal

Waste disposal in Western Australia is largely restricted to landfilling. While modern landfills are relatively benign, many landfills in non-metropolitan Western Australia do not meet modern standards.

Challenges, needs and priorities

There is a challenge is to ensure that there is sufficient high-quality landfill capacity to safely manage the waste remaining after recycling and resource recovery. Prices for residual waste disposal should reflect the full social and environmental costs so that disposal does not compete unfairly with resource recovery. It can be difficult for landfills in rural areas to meet high standards because of cost and other resource constraints. The disposal of hazardous and problematic waste poses particular challenges because of the environmental and health risks. In implementing the Strategy, the Waste Authority will be mindful of the potential impacts of its policies on illegal dumping

The maintenance and enforcement of high environmental standards for the establishment and management of landfills is a priority. There is a need to encourage the replacement of small rural landfills with transfer stations. Waste can be consolidated at these facilities before being transported to larger regional landfills that are built and managed to a high standard.

There is a need for a state-wide planning framework to deal effectively with the siting of waste disposal and resource recovery infrastructure in a way that satisfies social, environmental and economic needs. This framework needs to ensure adequate resource recovery and waste disposal capacity to meet current and future needs and contingency planning for the temporary or permanent closure of some facilities. The framework would support regional strategic waste management planning.

There is also a need to ensure that appropriate standards for landfill siting, design and management are defined for urban and rural contexts, and that these standards are adhered to.

Adequate education, infrastructure, penalties and enforcement are required to deter littering behaviour and illegal dumping.

Many indigenous communities in Western Australia either receive no waste management services or receive much more limited services than the rest of the Western Australian community. There is a need to ensure that remote communities receive proper waste management services.

Waste disposal targets *Box 6*

7. All landfills servicing metropolitan Perth will be operating to appropriate standards by 2011.
8. All landfills servicing non metropolitan regional centres with a population greater than 25,000 (see Box 4) will be operating to appropriate standards by 2015
9. Landfills that accept municipal waste and that do not meet appropriate standards will be closed by 2015 if they lie within a 100km radius of a landfill that does meet the standards. These sites will be replaced with transfer stations.
10. Residual municipal waste from all regions with a population of less than 25,000 will be managed in accordance with a local or regional strategic waste management plan by 2012.

Questions for Consideration

7. What do you think of these targets (see Box 6)?

Strategies

Landfill standards	Target Dates
The Department of Environment and Conservation in partnership with the Waste Authority will revise the State's landfill guidelines to establish appropriate standards in the siting, design, operation and post-closure management of landfills within the state.	Completed by mid-2010
Regional and state-wide planning	
Regional Councils and other local government groupings will develop Strategic Waste Management Plans for their regions, addressing waste avoidance, resource recovery and residual waste management, consistent with the aim of the Waste Strategy.	Completed in 2009
The Waste Authority and DEC will work with Regional Councils and individual local governments to establish a program of landfill rationalisation to replace many small landfills with transfer stations. The tools used to achieve this may include both incentives and regulatory approaches.	Completed by 2014
The Waste Authority in collaboration with the Departments of Planning, Local Government and Heritage and Regional Development and Lands will develop a state-wide planning framework for the provision and siting of waste infrastructure. The framework will include contingency planning for the disposal of waste generated from major population centres.	Completed by mid-2011
Hazardous waste management	
The Waste Authority will work in partnership with Regional Councils and individual local governments to provide collection services for household hazardous wastes that should not be disposed through kerbside services and to landfill.	Established by mid-2010
Remote and mining communities	
Regional Councils and other local government groupings will develop waste management plans for the disposal of waste from remote indigenous communities to ensure good social, environmental and economic outcomes.	
The Waste Authority will work with the mining industry to ensure appropriate management of waste from mine site accommodation and facilities.	Established by mid-2011
Litter and illegal dumping	
The Waste Authority will require future Strategic Waste Management Plans to include litter and illegal dumping management strategies.	Completed by mid-2010
Education	
The Waste Authority will support education initiatives that promote positive behaviours in respect of litter and waste disposal.	

Questions for Consideration

8. Are there any other strategies that you think the Waste Authority should consider?

9. What time frames do you think are suitable?

7 Data

Challenges, needs and priorities

Appropriate and reliable data is central to good management and will assist the Waste Authority and other stakeholders to identify problem areas and assess the effectiveness of measures to address them.

Data on waste can be difficult to obtain. While local government provides a considerable amount of data to assist in quantifying and characterising the waste that they manage, this is not the case in the private sector. There is a need to identify the specific data needs to enable accurate measurement of the Strategy's actions. An important part of this Strategy will be to clearly identify which data would actually be used if collected, and to focus on that data collection that serves the management needs of the Strategy.

Better means of collecting and analysing data may suggest different targets for subsequent iterations of the strategy and it may be appropriate to invest to improve data capabilities, in the longer term.

Strategies

Landfill standards	Target Dates
The Waste Authority will establish baseline data and monitor trends and progress.	Completed by mid-2010
The Waste Authority will investigate techniques to generate reliable waste data estimates for non-metropolitan Western Australia.	
The Waste Authority will encourage stakeholders to identify areas where better data could support improved management of wastes.	

Questions for Consideration

10. What data do you think we need to more effectively manage our waste?

11. How do you think this data will support better management?

8 Monitoring, reporting and review

The Waste Authority will monitor progress towards meeting the strategy targets. Progress will be reported in the Waste Authority's annual report.

There will be a need to upgrade some data collection systems. The Waste Authority will ensure that data systems are in place for measuring performance by 2010 so that robust and credible data are in place for measuring the success of the Strategy. Assistance will be required from local government, the Department of Environment and Conservation and the waste and resource recovery industry.

If reporting demonstrates that progress towards targets is unsatisfactory, more stringent approaches will be considered by the Waste Authority in consultation with the Minister.

In accordance with the Waste Avoidance and Resource Recovery Act, the Waste Authority will review the strategy whenever directed to do so by the Minister or after five years. The review will consider progress towards meeting the targets and towards implementation of the various strategies. It will also involve consultation with key stakeholders. The strategy may be amended as a result of these actions.

9 Business Plan

In accordance with the *Waste Avoidance and Resource Recovery Act 2007*, the adopted waste strategy will be used to inform the Waste Authority's 5 year business plan, to be reviewed on an annual basis. While the development of the business plan does not involve a formal consultation process, the Waste Authority will be mindful of the stakeholder input received during the consultation on the draft waste strategy. Once approved by the Minister, the business plan will be publicly available on the internet.

10 Glossary

Advance recycling fee is a charge that is included in the purchase price of the product in order to provide funds for appropriate management of the product after it has been used. A container deposit system is one type of advance recycling fee.

Alternative waste treatment facilities (also sometimes referred to as advanced waste technologies) are waste recovery and treatment processes designed to recover resources from mixed wastes, like municipal waste. The term covers a wide range of treatment technologies, typically involving an initial mechanical sorting process, followed by biological or thermal processes.

Composting is the breakdown of organic materials such as paper, garden waste and food by biological processes. Composting can be carried out on a source separated waste stream, such as kerbside collection of green waste, or on mixed waste streams, such as unsorted municipal waste.

Extended producer responsibility is an approach to product stewardship in which industry is responsible, physically or financially, for post-consumption product management.

Landfills; definition of categories and what goes in to them (See Appendix for definitions of classes and waste types).

A **materials recovery facility** is plant and equipment for sorting and pre-processing materials from the waste stream for recycling.

The **National Packaging Covenant** is a voluntary initiative by government and industry, to reduce the environmental effects of packaging on the environment. It aspires to minimise the environmental impacts arising from the disposal of used packaging, conserve resources through better design and production processes and facilitate the re-use and recycling of used packaging materials.

Product stewardship occurs when industry maintains some responsibility for the post-consumption management of its products.

Recycling is the reprocessing of materials into new products, without causing significant changes in the chemical structure of the materials.

Residual waste is the remaining waste after recoverable materials have been separated out at source or at waste treatment facilities.

Resource recovery means finding uses for waste by way of reuse, reprocessing, recycling or energy recovery.

Waste generation is the sum of waste disposed to landfill and resource recovery.

Waste avoidance is the change in waste generation over a given time period.

Waste infrastructure refers to all types of waste facilities and the plant and equipment which support them.

11 Appendix – Landfill Classes and Waste Types

TABLE 1 LANDFILL CLASSES AND WASTE TYPES		
LANDFILL CLASS	COMMON NAME	WASTE TYPES PERMITTED FOR DISPOSAL
Class I (Prescribed Premises Category 63)	Inert Landfill	• Clean Fill • Type 1 Inert Waste • Contaminated solid wastes meeting waste acceptance criteria specified for Class I landfills (possibly with specific licence conditions) • Type 2 Inert Waste (with specific licence conditions) • Type 3 Inert Waste (subject to DEP approval) • Type 1 Special Waste
Class II (Prescribed Premises Category 64 or 89)	Putrescible Landfill	• Clean Fill • Type 1 Inert Waste • Putrescible Wastes • Contaminated solid waste meeting waste acceptance criteria specified for Class II landfills (possibly with specific licence conditions) • Type 2 Inert Wastes (with specific licence conditions) • Type 1 and Type 2 Special Wastes (for registered sites as approved under the Controlled Waste Regulations)
Class III (Prescribed Premises Category 64)	Putrescible Landfill	• Clean Fill • Type 1 Inert Waste; • Putrescible Wastes; • Contaminated solid waste meeting waste acceptance criteria specified for Class II or Class III landfills (possibly with specific licence conditions) • Type 2 Inert Wastes (with specific licence conditions) • Type 1 and Type 2 Special Wastes
Class IV (Prescribed Premises Category 65)	Secure Landfill	• Clean Fill • Type 1 Inert Waste; • Contaminated solid waste meeting criteria specified for Class II, Class III or Class IV landfills (possibly with specific licence conditions) • Type 2 Inert Wastes (with specific licence conditions) • Type 1 and Type 2 Special Wastes
Class V (Prescribed Premises Category 66)	Intractable Landfill	• Intractable and other wastes in accordance with the approvals for the site.
Note: Materials used for rehabilitation and final landforming (including Class I landfills) need not be wastes, and may include clean fill and soil mixes incorporating mulches, grass sods, peat and biosolids. Rehabilitation to the surface of landfills should be conducted primarily with sand and loam to a depth generally not exceeding two metres and may involve the use of neutralised peat or acid sulfate soils or other organic matter to aid soil structure, but not as the main ingredients.		