



Response to the Standing Committee on Public  
Works

# **Inquiry into Municipal Waste Management in New South Wales**

March 2006

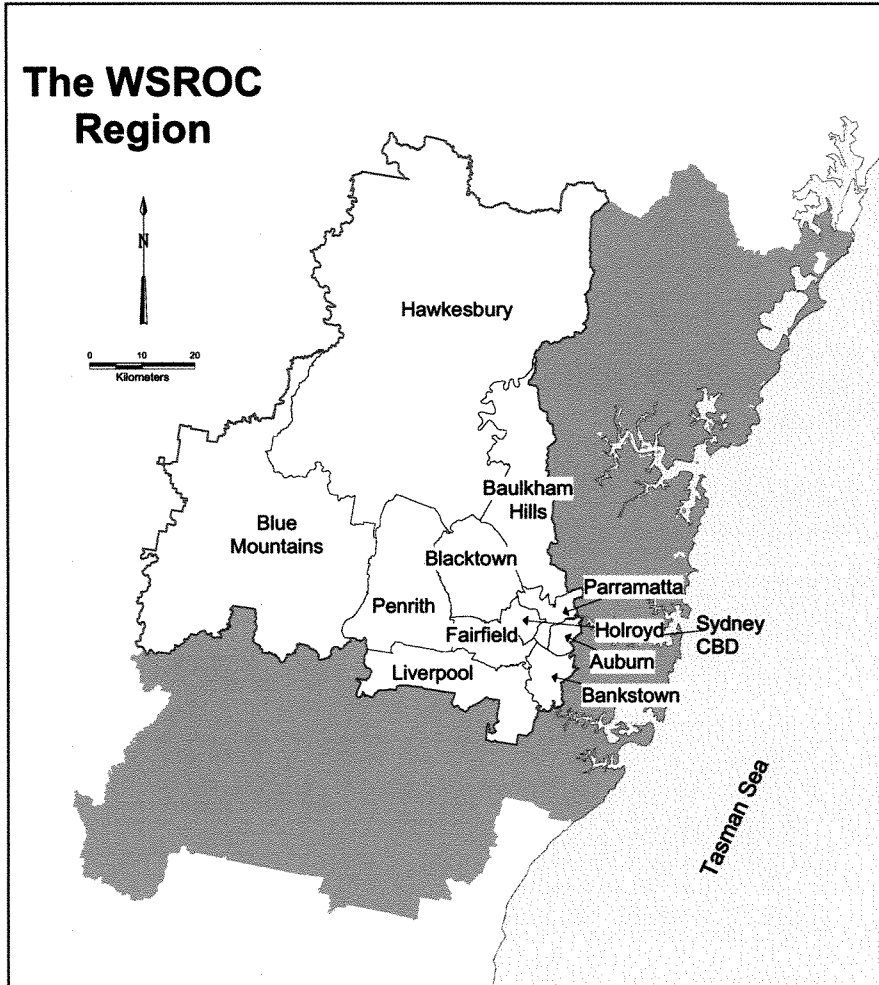
Prepared by the

Western Sydney Regional Organisation of Councils Ltd



**Western Sydney Regional Organisation of Councils Ltd**

Level 1, WSROC House, 49 Campbell Street  
PO Box 63, Blacktown, NSW 2148  
Tel (02) 9671 4333 Fax (02) 9621 7741  
Email [admin@wsroc.com.au](mailto:admin@wsroc.com.au) [www.wsroc.com.au](http://www.wsroc.com.au)  
ABN 16 053 399 983



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**Liverpool  
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**Submission to the NSW Standing Committee on Public Works Inquiry into Municipal Waste Management in New South Wales**

**Introduction**

On 30 January 2006 the NSW Standing Committee on Public Works wrote to inform WSROC of an Inquiry into Municipal Waste Management in New South Wales. The Inquiry's aims are to examine issues relating to waste management practices and consider whether alternative management practices might offer lower incremental costs and preferred environmental outcomes. In particular the Inquiry hopes examine the following:

1. The effectiveness and appropriateness of current municipal waste management.
2. Impediments and incentives to best practice municipal waste management.
3. Best practice methods, including cost effectiveness, of planning and providing municipal waste management services.
4. The development of new technology and industries associated with waste management.
5. Minimising harm to the environment in the provision of waste management services.

Submissions to the Inquiry are to be received prior to 31 March 2006.

This submission to the Inquiry draws upon a variety of research sources and presents the challenges and opportunities faced by councils from Western Sydney and the region as a whole in the management of municipal waste. Western Sydney is presented with an increasing population, numerous landfills approaching capacity, limited potential for new landfills, social disadvantage, and complex and congested transport routes. Waste management represents a significant operating cost for local government and poor waste management practices can be environmentally costly.

For more than 30 years WSROC lobbied for a more sustainable lifestyle for the people of Western Sydney. WSROC's mission is:

To secure – through research, lobbying and the fostering of cooperation between councils – a sustainable lifestyle for the people of Western Sydney and the provision of infrastructure such that no one should have to leave the region to have access to the sorts of amenities, services and opportunities others in urban Australia take for granted.

WSROC's mission statement reflects a strong commitment to sustainability and effective waste management is at the heart of this ideal. To this end WSROC's submission examines current waste management in Western Sydney and makes recommendations to increase its sustainability.

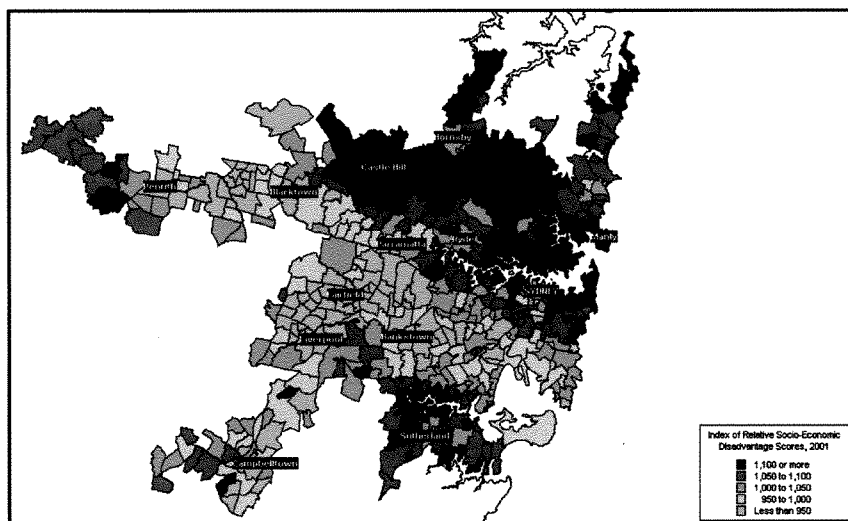
## Background

Greater Western Sydney (comprising the WSROC region shown on the previous map and the Macarthur ROC regions) contains fourteen local government areas (LGAs) representing cities and Shires which account for over 42% of the Sydney metropolitan population and a large area of the metropolitan fringe. It is one of Australia's most important urban regions.

The population is about 1.8 million people or 1 in 11 Australians. In 2003 GWS accounted for 43.2% of the population of metropolitan Sydney and 27.1% of the population of NSW.

It is proposed (Department of Planning 2005) that Western Sydney accommodate over half of the population growth in NSW over the next 20 years – approximately 600,000 people. This compares to regions such as the Hunter and the Illawarra which will grow by an additional 100,000 people over this time.

Western Sydney is not homogeneous and in some of the larger local government areas census data averages hide pockets of severe socio-economic disadvantage (Randolph and Holloway, 2003, 2004). Many of the 'middle ring' suburbs in the region are now the locations of some of the most disadvantaged communities in Australia. These areas are extensive and include parts of Auburn, Bankstown, Parramatta, Fairfield, Blacktown, Penrith and Liverpool.



**Figure 1 ABS Index of Relative Socio-Economic Disadvantage, Sydney Urban Suburbs 2001**

Source: *Urban Frontiers Program, University of Western Sydney*

Many parts of the region are also experiencing continued growth pressures whilst still dealing with backlogs and continued under-investment in infrastructure provision, particularly in relation to public transport.

### **Effectiveness and Appropriateness of Current Municipal Waste Management**

It is difficult to present a consensus view of effective and appropriate municipal waste management. The people and councils of Western Sydney face similar challenges but the region is not homogeneous. An effective and appropriate municipal waste management system will vary from council to council as it adapts to the specific challenges presented by each area. Various systems might be cost effective, convenient, of minimal disturbance to residents, resource efficient or environmentally sound. Ideally, an effective municipal waste management system will incorporate all these elements and will be justifiable in terms of its economic, social and environmental impacts; that is it will be sustainable. Throughout this submission the terms sustainable and best practice will be used to describe effective and appropriate municipal waste management.

Western Sydney produces 350kg of domestic waste per person per year compared with 400kg of domestic waste produced per person per year for Australia as a whole. Australia ranks second amongst all industrialized countries in waste production per head. Until the close of the twentieth century Western economies operated with a 'one way' use of resources. However, there are now several widely accepted imperatives for waste reduction and many have particular relevance to Western Sydney.

For example, in 2001 the Environmental Protection Agency (EPA) estimated that at current landfilling rates, capacity would be reached by 2007. Even if waste reduction targets of 60% set out in the *Waste Minimisation and Management Act 1995* were met by 2000, existing landfills would reach capacity by 2015. This prediction is becoming a reality in many local government areas across Western Sydney as their landfills become full. Adding to this problem is rapid growth in the region that will likely be mirrored by increased domestic waste, unless effective strategies or technology are employed to reduce waste rates. New landfills are difficult to establish due to community opposition and a decrease in the amount of open space within local government areas means.

Current municipal waste management varies across Western Sydney. Smaller councils collect up to 20 000 tonnes per year while larger collect up to 100 000 tonnes per year. A range of services are provided, with all councils offering rubbish collection and recycling, and the majority also providing greenwaste collection. Municipal waste management can cost from \$5 million up to \$20 million per annum, consuming a significant proportion of each council's budget and the staff employed in waste management represent a significant proportion of the total council workforce.

Community perception of councils as waste managers is reflected in the maxim 'roads, rates and rubbish', which is often used to sum-up what councils do. The role of councils was never, in reality, limited to just these areas and council's role has broadened in recent history. Faced with an expanding portfolio of services, growing community expectations amongst expanding populations, new planning regulations and increasingly complex environmental management requirements, effective and appropriate waste management is a significant challenge.

A number of Western Sydney councils have implemented what is often viewed as 'best practice' municipal waste management in their area through three bin collection systems. However, three bin collection systems are not always appropriate in all local government areas and some councils that implement best practice management do so without using a three bin system. Some Western Sydney councils implement best practice management through the use of alternative waste management facilities. Given limited budgets and resources the councils of Western Sydney do provide effective and appropriate municipal waste management, however, a number of initiatives (discussed later in this submission), additional resources, increased funding or a more efficient use of available funds would allow for more sustainable waste management across the region.

## **Impediments and Incentives to Best Practice Municipal Waste Management**

### **Impediments**

It is generally accepted that best practice municipal waste management and effective and appropriate municipal waste management are linked and should uphold the tenants of sustainability. Across Western Sydney a complex interplay of impediments and incentives effect and shape best practice municipal waste management.

Many of the impediments and incentives to best practice municipal waste management are shared across the region, while others are specific to particular local government areas. Some of the broader impediments all councils face include increasing populations and congested and complex transport routes. Other impediments apply to specific councils such as providing best practice municipal waste management in areas that span the urban rural divide and providing waste management services to areas with numerous multiple unit dwellings or gated communities.

Some of the common incentives to best practice municipal waste management include increasing landfill costs and environmentally sound waste management demands, and decreasing landfill capacity. One of the incentives felt less equally across the Western Sydney region is the varying strengths of community opposition to landfilling operations which are near residential areas or the proximity of councils to technologically advanced waste management facilities.

Many of the impediments to best practice municipal waste management are related to community attitudes. In many respects there has been a radical change in local and State Government strategies to manage waste, but there has been no matching revolution in community perception and behaviour. This situation has been contributed to by a pervasive cultural mindset that views waste as someone else's problem. Often council initiatives fail to achieve their maximum impact due to minimal uptake by the community, which may result from ignorance, apathy and a lack of motivation.

For example, several councils across Western Sydney are unable to capture full advantage of recycling and reuse opportunities due to high household contamination rates. In addition to contaminated waste streams and underutilised services, illegal dumping is a major impediment to best practice municipal waste management. Costs to decontaminate waste streams and remove illegally dumped materials are a substantial burden on waste management budgets.

Dumping can result in the diversion of limited resources from sustainable waste management, and the degradation of visual amenity and natural resources. Attempts have been made by councils to manage these issues by proceeding to co-mingled recycling services and providing additional residential clean-up services at a significant financial cost. Assuming adequate services are provided, enforcement and education are required to manage community waste practices and attain best practice municipal waste management.

Difficulties with enforcement and community education are a major impediment to sustainable waste management in Western Sydney. Enforcement and community education are complicated by large transient, low-socio economic and high non-English speaking background populations. For example, the Auburn Local Government Area has 48.2% of its population coming from non-English speaking backgrounds, compared with 20.9% for Sydney as a whole and 15.5% of its residents with poor English skills, compared with 4.9% for Sydney as a whole. Sustainable municipal waste management has progressed in many local government areas through improved technology and practice and it is evident that further gains will increasingly require councils to grapple with complex social issues.

Concerted education campaigns to 'avoid, reduce, reuse and recycle' have yielded changed attitudes and behaviour towards recycling. However, messages to avoid, reduce and reuse

have failed to curb rampant consumerism and waste generation. Current consumption rates generate waste too swiftly and challenge its safe, cost effective and productive disposal. Education campaigns and budgets that aim to create waste wise citizens compete against mass marketing and advertising campaigns that relentlessly urge community members to consume. Prosperity has become synonymous with consumption and waste production. A raft of new products and designs are continually produced and individuals are encouraged to upgrade their possessions irrespective of whether what is being replaced is still functional.

This trend is sometimes reflected in the housing market of Western Sydney where modest homes are being replaced by dwellings that dominate the entire housing block, dual occupancies or multi unit dwellings. The demolition of old homes generates much waste and radically transformed urban landscapes are causing multiple municipal waste management challenges by completely transforming the context of waste management. Best practice waste management for dual occupancies and multi unit dwellings (MUDS) is still developing. Access for waste management and how to provide recycling services are particular issues for councils when servicing MUDS. Dumping around MUDS is also a significant problem for councils. MUDS can attract a more transient population and items unwanted at the next place of residence are left abandoned for costly council removal.

Another emerging housing initiative to present challenges to best practice municipal waste management in Western Sydney is the 'gated community'. Roadways in many 'gated communities' are not designed to withstand heavy vehicle traffic. They are not wide enough, nor strong enough to accommodate the standard waste pickup vehicle. Residents may be forced to pay private contractors to collect their waste who do not provide the same range of recycling, green waste and household collection services as councils. For councils to service these areas they would need to develop completely new waste management strategies and potentially this may include having to purchase costly plant capable of accessing the 'gated communities'.

Major human activities are shaping Western Sydney's regional landscape. Urban expansion, transport, planning regimes, use of space, agriculture and rural areas are all impacted by population growth in the region. Urban expansion is an impediment to best practice municipal waste management as additional waste services have to be provided across a greater area causing increasing collection and transport costs and environmental impacts associated with vehicle use and fossil fuel consumption. Transport routes not only become longer, they also become more complex and extra people bring additional vehicles meaning that roads become further congested.

Planning regimes are challenged by rapid population growth and amongst these challenges is planning for municipal waste management facilities while managing community opposition to such facilities in urban areas. This raises the issue of ensuring that planning is equitable and does not result in waste being transported from one region to be landfilled in another. Planning must also consider the benefits of agricultural lands in being able to absorb vast amounts of residential waste as fertiliser and compost. Planning should protect these lands for this and many other reasons and initiatives should be explored so that farms can productively use more waste products. Population growth and development is also leading to a distinct urban and rural divide. Councils that span this divide are challenged to provide waste services that satisfy the needs of both residential and agricultural premises. All these factors lead to increasing municipal waste management costs.

Increasing municipal waste management costs can act as a major impediment to best practice by depleting budgets that could be used to improve waste management. Currently there is a lack of market demand for waste products. If market forces could be stimulated to make sustainable waste management less cost prohibitive, more councils would be willing to invest in infrastructure for best practice waste management and reduction. To date the Eastern Creek Urban Resource – Reduction, Recovery and Recycling facility is the only alternative waste technology plant which has progressed beyond a trial stage in the Western Sydney region and so far only two local government areas use its services. Cost

prohibitiveness makes it difficult for councils to determine sustainable methods of waste disposal and the collection infrastructure to be used for such methods.

#### Incentives

While there are numerous impediments to best practice municipal waste management there are also several strong incentives. While best practice municipal waste management can be costly, it is also true that it can be costly not to manage waste in this way. Landfilling costs are perhaps the greatest incentive to sustainable municipal waste management. Sydney landfilling fees can be upwards of \$100 per tonne and waste levies are high and are set to rise even further in the future.

These costs place a greater emphasis on the need to provide sustainable waste management that may reduce the quantity of waste to landfill and increase the quality of recycling. Diversion from landfill has become a priority for councils. Costs associated with landfilling are forcing councils to rethink their waste management strategies. Recycling services are now the norm and a growing number of councils are also providing services for green waste, which can account for up to 40% of municipal waste.

Concern for the environment and regulations designed to protect the environment are another key driver of sustainable waste management. Waste has the potential to adversely impact human and environmental health throughout its entire lifecycle. Waste has an impact on human and environmental health from its point of generation, during transport, disposal, recycling and reuse. A growing understanding of this has seen waste avoidance given preeminence in the hierarchy of waste management for many councils. However, for avoidance to really limit waste production a revolution is required in the way products are packaged and companies must take more responsibility for the lifecycle of their products.

Another significant incentive for best practice municipal waste management is the fact that many urban landfill sites are reaching capacity and there are limited options for the establishment of new landfill sites. Several councils in Western Sydney operate their own landfill facilities and most of these are almost at capacity. Landfills occupy vast areas of costly land. Replacing expired landfills is a costly proposition which is bound to be complicated further by community opposition to potential landfill sites near to residential areas.



**Best Practice Methods, Including Cost Effectiveness, of Planning and Providing Municipal Waste Management Services**

Best practice or sustainable municipal waste management must respond to the particular challenges presented by each area. There are no 'one-fit' solutions, however, all potential solutions should attempt to avoid and prevent waste, increase renewable and recovered material, reduce toxicity in products and materials, and reduce litter and illegal dumping. A mixture of tools and approaches must be utilised to achieve best practice municipal waste management including the establishment of infrastructure to foster waste prevention and resource recovery, education campaigns to promote a waste wise community, economic incentives to stimulate sustainable waste management practices, and behaviour change should be mandated. Local government has a strong role to play in best practice municipal waste management but this role needs to be augmented by State and Federal Government initiatives.

Many local government areas across Western Sydney provide best practice municipal waste management. Curbside recycling, drop off facilities, curbside chipping, managing landfills to reduce environmental impacts, data collection, waste reduction, cleanups, community education, illegal dumping programs, composting and anti-litter campaigns are some of the initiatives undertaken in various council areas. Many councils offer three bin collection services which aim to reduce the total amount of waste to landfill and increase recycling and greenwaste processing. Improvements towards more sustainable waste management across the region could be made with additional councils offering greenwaste services.

In many instances councils do not have sufficient funding to implement the latest waste management technologies. Often funding is instead directed towards employment of waste education officers. These officers coordinate a number of education programs and campaigns aimed to mitigate waste generation and enhance compliance with council waste policies and procedures. Campaigns may be delivered directly to the wider community or delivered through schools. A number of councils are also forming partnerships with each other to deliver regional environmental education campaigns such as the Regional Illegal Dumping (RID) Campaign.

Many councils find school education advantageous in overcoming communication barriers that can be present in multicultural communities. The premise is that school students will teach their parents what they have themselves learnt about waste at school. Bankstown City Council developed an award winning and innovative waste game as a means of educating students and subsequently the community about waste. Bankstown is made up of a diverse community which consists of 170, 000 people, including 130 nationalities, over 60 different languages spoken and almost 50% of residents from linguistically diverse backgrounds. School education campaigns provide an effective method of spreading important waste messages across the community.

## **The Development of New Technology and Industries Associated with Waste Management**

### **The Eastern Creek Urban Resource – Reduction, Recovery and Recycling (UR-3R) Facility**

In most instances councils do not have the requisite funding to develop new waste technologies or waste industries. Councils attempt to implement best practice municipal waste management throughout their municipality using the resources at their disposal and these resources invariably fall short of allowing the development of new waste technologies or industry. In Australia, waste management is regulated by State authorities and managed by local councils who are guided by State waste management agencies. Councils look to state agencies to establish the accepted waste management directions and create the imperative for new waste technologies and industries. Under this system landfill disposal rates are sometimes discounted below the full costs required to cover site rehabilitation; a situation that makes it difficult for recycling services to successfully compete. One service which has been able to compete successfully is the Eastern Creek UR-3R Facility which was launched in September 2004.

The Eastern Creek UR-3R Facility provides an example of the development of new technology and industry for waste management. It is Sydney's first Alternative Waste Technology facility for household waste and is a partnership between the State-owned WSN Environmental Solutions and Global Renewables and represents a \$71 million investment in Western Sydney.

The UR-3R Facility is designed to process 260 000 tonnes of municipal solid waste per annum. This represents 12% of Sydney's waste. The UR-3R facility uses integrated sorting, biological digestion and composting processes that were selected after 51 different types of technologies were assessed over three years. The facility uses a four-stage process that transforms household waste into a valuable product at every stage including metals, glass, paper, green electricity and compost. The plant is designed to divert 80% of waste away from landfill, produce 23,500 tonnes of compost each year, capture 100% of biogas produced, reduce greenhouse gas emissions equivalent to taking 50 000 vehicles off the road and produce green electricity equivalent to providing up to 2 250 homes green power.

Fairfield City Council signed up to use the facility in December 2003. Blacktown City Council, the largest council in New South Wales is the second council to sign up to the facility which it will use to process more than 83 000 tonnes of waste each year. Using this facility instead of traditional facilities will ensure that significant amounts of waste are diverted from landfill, greenhouse gases will be reduced by the equivalent of taking 25 000 vehicles off the road, 11 500 tonnes of recyclable materials will be recovered and enough green electricity will be produced to provide 1 200 homes with year round green power.

As landfill costs continue to rise and landfill space is diminished it is likely that new technologies and alternative waste technology facilities will become more cost competitive with conventional waste management facilities. With cost penalties removed and given the environmental benefits offered by many new technologies and industries, there will be a strong case for more facilities to be developed and for further councils to use them.

### **Minimising Harm to the Environment**

Waste has been a part of human settlement for thousands of years. The advent of the scientific and industrial revolutions created two factors which have had a dramatic effect on waste. The first was that the creation of sophisticated means for production meant that the human population could grow at an exponential rate. The second was the creation of the foundations for the development of new persistent, synthetic and hazardous chemicals and by-products. The practices of the past few hundred years have therefore dramatically changed our environment and waste is now seen as a serious threat to sustainability and a challenge to environmental and human health.

The capacity of ecosystems to absorb wastes is limited so waste and community attitudes towards its production are pressures on environmental sustainability. A multi-dimensional relationship exists between waste and sustainable development. Land, air, water, biodiversity and community heritage are all impacted by waste and pollution. High levels of waste are a symptom of high levels of consumption and represent a situation where valuable resources are landfilled rather than being reused or recycled. Waste is a major pressure on many valuable natural resources. This pressure will continue if lifestyles and industry continue consuming products once and then disposing them to landfill.

Councils have a significant role to play in the management of waste. All councils aim to reduce impacts to the environment arising from the production of municipal waste. Many council programs focus on a combination of initiatives that fall into the categories of avoidance, reduction, reuse or recycling. Initiatives falling into these categories are promoted through councils own operations and education is provided to the community to help them to become increasingly sustainable.

Unfortunately, many of the most sustainable and environmentally sound waste management practices are also the most costly. Given the limited budgets of many councils these sustainable and environmentally sound options may not be possible. Councils have however demonstrated that where possible they are willing to utilise alternative waste technology industries to achieve environmental benefits such as the Eastern Creek UR-3R Facility.

## **Conclusions**

The municipal waste management context in Western Sydney has reached a critical point due to diminishing landfill capacity, rising landfill costs, the growing population, consumption and waste generation rate, few possible new landfill sites, and requirements to minimise the environmental impact of landfill operations. Despite a growing portfolio of services and limited budgets many Western Sydney councils do offer examples of sustainable municipal waste management, however, further assistance is required from the State Government to ensure that best practice municipal waste management is implemented in all local government areas.

## **Recommendations**

1. State Government should pursue the establishment of additional alternative waste technology facilities and infrastructure in locations across the region as identified in the Metropolitan Strategy. Several facilities should be established with adequate capacity to cope with all of Sydney's waste and these facilities should be created in a range of areas so that waste can be transported to them efficiently. Alternative waste management facilities in the Sydney region should be given precedence over facilities out of Sydney that require waste to be transported long distances.
2. Additional funding should be provided for State and National waste education campaigns and these should be offered in a range of languages.
3. Research should be conducted into the provision of waste management services to multiple unit dwellings so that best practice methods can be identified for the provision of recycling services and so that incidence of illegal dumping can be reduced. Councils need to be informed of what are the best practice methods.
4. Waste Boards should be strengthened to facilitate collaborative regional waste initiatives and develop best practice guidelines.
5. The State Government should stimulate opportunities for regional waste partnerships through the establishment of a waste grants program that targets innovative regional waste initiatives with sustainability outcomes.
6. Opportunities for the diversion of composted organic waste to agricultural lands across the Sydney Basin should be explored and a body should be established to facilitate this process.
7. A proportion of the Waste Levies should continue to be given back to councils and an additional portion should be given back in the form of interest free loans to be used for waste mitigation initiatives.
8. The Waste Levy Rebate should be assessed on a 'case by case' and outcomes basis and not a conventional notion of best practice (which typically involves the use of a three bin collection system). Two WSROC councils currently use an alternative waste technology facility to obtain best practice sustainable waste management without using a three bin collection system. Councils such as these should not be disadvantaged for pursuing best practice methods not involving a three bin system.
9. The State and Federal Government should explore opportunities to make companies reduce packaging and take responsibility for the lifecycle of their products.
10. The State and Federal Government should mandate waste reduction rates rather than providing voluntary targets such as those identified in the Metro Strategy that set the goal for an increase in resource recovery from 26% to 66%.
11. Councils should be encouraged to consider strong fines for waste stream contamination.

12. The State Government should ensure that traditional landfill operating costs include the remediation and rehabilitation expenses.
13. The State Government should consider establishing trusts to hold the rehabilitation monies that all bodies operating landfills are required to save.
14. The State and Federal Government should encourage the use of alternative fuels for waste management vehicles.