



PENRITH



## WASTE STRATEGY 2017-2026

PENRITH  
CITY COUNCIL

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# **WASTE AND RESOURCE RECOVERY STRATEGY (2017-2026)**

**ADOPTED BY PENRITH CITY COUNCIL ON 23 SEPTEMBER 2017**

## **EXECUTIVE SUMMARY**

Penrith's *Domestic Waste Strategy* (DWS) adopted in 2005 has seen us recognised as a leader in sustainable waste management and diversion of waste from landfill.

Council and residents have benefitted from reduced waste levy costs and increased resource recovery, including quality compost from our organics recycling going back on to local sportsgrounds.

While the earlier changes were not without their challenges, they mean we are now in a strong position compared to many other local government areas that are struggling to meet State targets within the required timeframes.

We have developed this Waste and Resource Recovery Strategy for 2017 to 2026 in the context of various State and Regional strategies and targets, to take us into the future. This renewed Strategy builds on our previous vision and successes, and reflects recent community consultation and waste audit results.

Council will look at all services currently provided and identify potential for improved resource recovery. This renewed Strategy focuses on opportunities presented through innovation, new technologies and facilities, and community education to continue to reduce the amount of waste we send to landfill and increase the value of resources being recovered and recycled.

We are committing to:

- Reduce waste generation to 7.5 kg/capita/week by 2021
- Achieve 70% diversion of waste from landfill by 2021
- Provide solutions for household problem waste by 2021
- Reduce incidence of litter
- Reduce incidence of illegal dumping
- Participate in regional contracts and services where appropriate

## INTRODUCTION

Penrith City Council's *Domestic Waste Strategy* (DWS) was prepared in 2005 and adopted by Council on 21 November 2005. Since its adoption, the DWS has been reviewed every five years, in 2010-11 and now 2016-17. Council's DWS must now also be considered in the context of the current State Government *Waste and Resource Recovery Strategy* and the *Western Sydney Regional Waste Avoidance and Resource Recovery Strategy (2014-2017)* (Regional Strategy).

The DWS has been the foundation and guide for meeting the challenges of waste management and resource recovery across our LGA. Council's Waste Strategy Working Party, in developing the DWS, insisted on simplicity and the need for high level community participation and acceptance.

**Table 1 – Key issues identified by Council**

	Social	Environmental	Financial
<b>High</b>	<ul style="list-style-type: none"><li>- Education and understanding</li><li>- Convenience to achieve good community participation</li><li>- WH&amp;S and IR implications that are consistent with Council practice</li></ul>	<ul style="list-style-type: none"><li>- Convenience to reduce contamination</li><li>- Achieve high levels of resource recovery</li><li>- Maintaining public health objectives and standards</li></ul>	<ul style="list-style-type: none"><li>- Minimising technology and operating risks post collection</li><li>- Seeking maximum benefit from competitive markets</li><li>- Maintaining certainty of supply</li></ul>
<b>Medium</b>	<ul style="list-style-type: none"><li>- Impact of local amenity</li><li>- Delivering on the community's expectations in waste management</li></ul>	<ul style="list-style-type: none"><li>- Reducing vehicle movements to minimise emissions</li><li>- Speed in moving towards State targets</li></ul>	<ul style="list-style-type: none"><li>- Cost impact on waste service charges</li><li>- Value in the products recovered from processing operations</li></ul>
<b>Low</b>	<ul style="list-style-type: none"><li>- Enforcement systems to achieve compliance</li></ul>	<ul style="list-style-type: none"><li>- Minimising incentive for illegal dumping</li></ul>	

Based on the key issues, the Working Party established a set of objectives that would form the guiding basis for Council when making decisions between competing options:

<b>a) Convenience</b>	Systems and practices that are convenient for the community to use and understand, so that the educative message is simple and clear, high levels of participation can be attained, and low contamination will be observed
<b>b) Recovery Targets</b>	Systems and practices capable of achieving high levels of resource recovery and move Penrith forward in delivering on State targets at a pace that is consistent with the evolving markets
<b>c) Risk Exposure</b>	Systems and practices that place technology and operating risks with service providers and provide Council with a high level of surety in service supply
<b>d) Competition</b>	Systems and practices that maximise potential for Council to derive value for money through competitive tenders and market competition
<b>e) Health &amp; Safety</b>	Systems and practices that maintain high levels of public health expected by the community and maintain Council's standards for WH&S and work practices

These objectives were used to evaluate the current services offered by Council, and will continue to be used when evaluating proposed opportunities which may be adopted by Council in the future.

## BACKGROUND

### 1.0 WASTE STRATEGY TARGETS

The proposed updated Waste and Resource Recovery Strategy (W&RRS) is now a broader document going above and beyond household waste to incorporate the opportunity to better manage all waste streams under Council control.

The new layout of the proposed W&RRS is also in accordance with the NSW EPA template and guidelines for preparing a waste strategy - this provides additional support to any applications for grants under the EPA funding programs.

The Regional Waste Strategy has set the following targets to be met by Penrith:

**Table 2 – Penrith Waste Strategy Targets**

Reduce waste generation to 7.5 kg/capita/week by 2021
Achieve 70% diversion of waste from landfill by 2021
Provide solutions for household problem waste by 2021
Reduce incidence of litter
Reduce incidence of illegal dumping
Participate in regional contracts and services where appropriate

These targets align with State Government targets.

### 2.0 OBJECTIVES AND STRATEGIC OUTCOMES

In continuing to align with the 2005 DWS vision, the high level strategic outcomes of the renewed W&RRS will:

- Cover a ten year period from 2017 to 2026
- Ensure consistency with Penrith's Community Strategic Plan (CSP) and City Strategy
- Align with the objectives and targets of the NSW WARR Strategy
- Be consistent with, and leverage the Regional WARR Strategy program, over the same time period
- Take advantage of the Waste Less Recycle More (WLRM) grant funding where applicable
- Focus on the delivery of a safe, cost effective, innovative and accessible waste management service for Penrith
- Consider industry leading technologies and delivery methods to incorporate into collection practices
- Establish a trajectory towards continued improvement in waste minimisation and diversion
- Embody flexibility, to enable Council the ability to readily adapt to maximise opportunities and minimise risk associated with emerging technological, financial, social and legislative contexts

## **3.0 STRATEGY FRAMEWORK**

### **3.1 State Government**

The New South Wales Government (NSWG) administers the waste regulatory framework through the *Protection of the Environmental Operations (POEO) Act 1997*, in conjunction with the *Waste Avoidance and Resource Recovery (WARR) Regulation 2005* and *The Protection of Environmental Operations Regulation 2005*. These documents outline the mandatory requirements for the management, storage, transportation, processing, recovery and disposal of waste.

### **3.2 Protection of the Environmental Operations (POEO) Act 1997**

The *Protection of the Environmental Operations (POEO) Act 1997* aims to reduce the risk to human health and prevent the degradation of the environment, by promoting pollution prevention, elimination of harmful waste, reduction of material usage and the reuse and recovery of recyclable materials.

All waste facilities proposed and used by Council need to be licensed in accordance with the POEO Act, with the onus to comply resting on Council.

### **3.3 Waste Levy**

The Waste Levy applies to regulated areas of NSW, encompassing:

- Sydney Metropolitan Area
- Illawarra and Hunter Regions
- North Coast Local Government Areas to the Queensland Border
- Blue Mountains Local Government Area (LGA)
- Wingecarribee LGA
- Wollondilly LGA

Regions within the above listed areas pay a mandatory contribution per tonne of waste deposited at a facility. This aims to promote recycling and resource recovery. The waste levies over the contract period (2009-17) are shown in Table 3. The increases observed are consistent with the Consumer Price Index (CPI).

**Table 3 – Metropolitan Waste Levy**

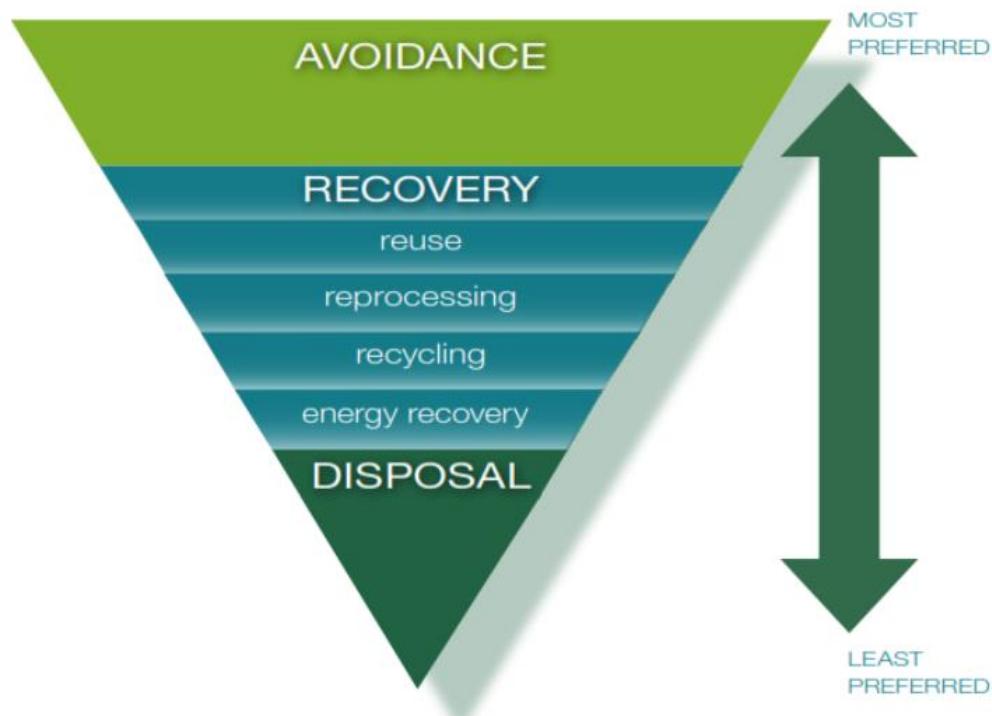
<b>Period</b>	<b>Metro Waste Levy (per tonne)</b>
2009-10	\$58.80
2010-11	\$70.30
2011-12	\$82.20
2012-13	\$95.20
2013-14	\$107.80
2014-15	\$120.90
2015-16	\$133.10
2016-17	\$135.70

### 3.4 Waste Avoidance and Resource Recovery Act

The *Waste and Resource Recovery Act 2001 (WARR Act)* is the primary Act governing resource recovery in NSW. The objectives of the WARR Act promote:

- The most efficient use of resources, including resource recovery and waste avoidance
- A reduction in environmental harm, including pollution through waste
- A consideration of the resource management hierarchy through avoidance of unnecessary resource consumption and disposal
- Resource recovery, which includes reuse, reprocessing, recycling and energy recovery

The WARR Act defines a waste hierarchy (Figure 1) ranking the management options in order of general environmental desirability.



**Figure 1 – WARR Act Waste Hierarchy**

### 3.5 Waste Avoidance and Resource Recovery Strategy 2014-2021

The *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021 (WARR Strategy)* provides a framework for waste management in NSW. It incorporates targets for waste reduction, resource recovery and diversion from landfill.

The following targets have been established for 2021-22:

- Avoiding and reducing the amount of waste generated by persons in NSW
- Increasing recycling rates to 70% for municipal solid waste
- Increasing recycling rates to 70% for commercial and industrial waste
- Increasing recycling rates to 80% for construction and demolition waste
- Increasing waste diverted from landfill to 75%

- Managing problem waste better, establishing 86 drop-off facilities and services across NSW
- Reducing litter, with 40% fewer items (compared to 2012) by 2017
- Combating illegal dumping with 30% fewer incidents (compared to 2011) by 2017

### **3.6 Waste and Resource Recovery Amendment (Container Deposit Scheme) Act 2016**

The *Waste and Resource Recovery Amendment (Container Deposit Scheme) Act 2016* established a Container Deposit Scheme (CDS) to be rolled out across NSW from 1 July 2017. This date has since been extended to 1 December 2017.

The CDS is anticipated to have the following impacts:

- The weight of dry recyclables will decrease
- Some containers will remain in recycling kerbside collection streams as households may not value the financial incentives of the CDS
- The commodity value of responsive containers (steel, glass, plastic) collected from bins at kerbside is lost to the Materials Recovery Facility (MRF)
- Commodity value of non-responsive containers (10c/unit) is retained by MRF and outweighs commodity values lost to responsive containers
- Average value of recyclables (\$/tonne) increases

The increase in the value of the recyclables in the bin is greater than the drop in tonnes; therefore, councils are expected to be financially better off long term. It is anticipated that the majority of this additional CDS value will flow back to Penrith in a competitive market (subject to appropriate contractual terms).

The introduction of the CDS in NSW will present other opportunities for Penrith, including additional space within the recycling bin, and the potential co-location of a container collection point with a local community drop-off centre.

### **3.7 Western Sydney Regional Waste Group (WSRWG) Strategy Targets**

The Regional WARR Strategy targets have been developed in line with the NSW targets:

- Work towards reducing regional waste generation from current generation of 7.8kg/capita/week to 7.5kg/capita/week by 2021
- Gradually improve the regional resource recovery rate from the current 53% to 58% by 2017 and 70% by 2021
- Work towards achieving the WARR target by 2021
- Build, upgrade or facilitate 10 community recycling centres and innovative solutions for households by 2021
- Partner with the State to establish a baseline for 2015 and work towards reducing the incidence of litter by 2017
- Partner with the State to establish a baseline for and work towards reducing the incidence of illegal dumping by 10% in 2017

## 4.0 STRATEGY FRAMEWORK

### 4.1 Regional Waste Facilities

The WSRWG region includes a significant number of waste management and processing facilities located near Penrith, as shown in Figures 2 and 3 below:

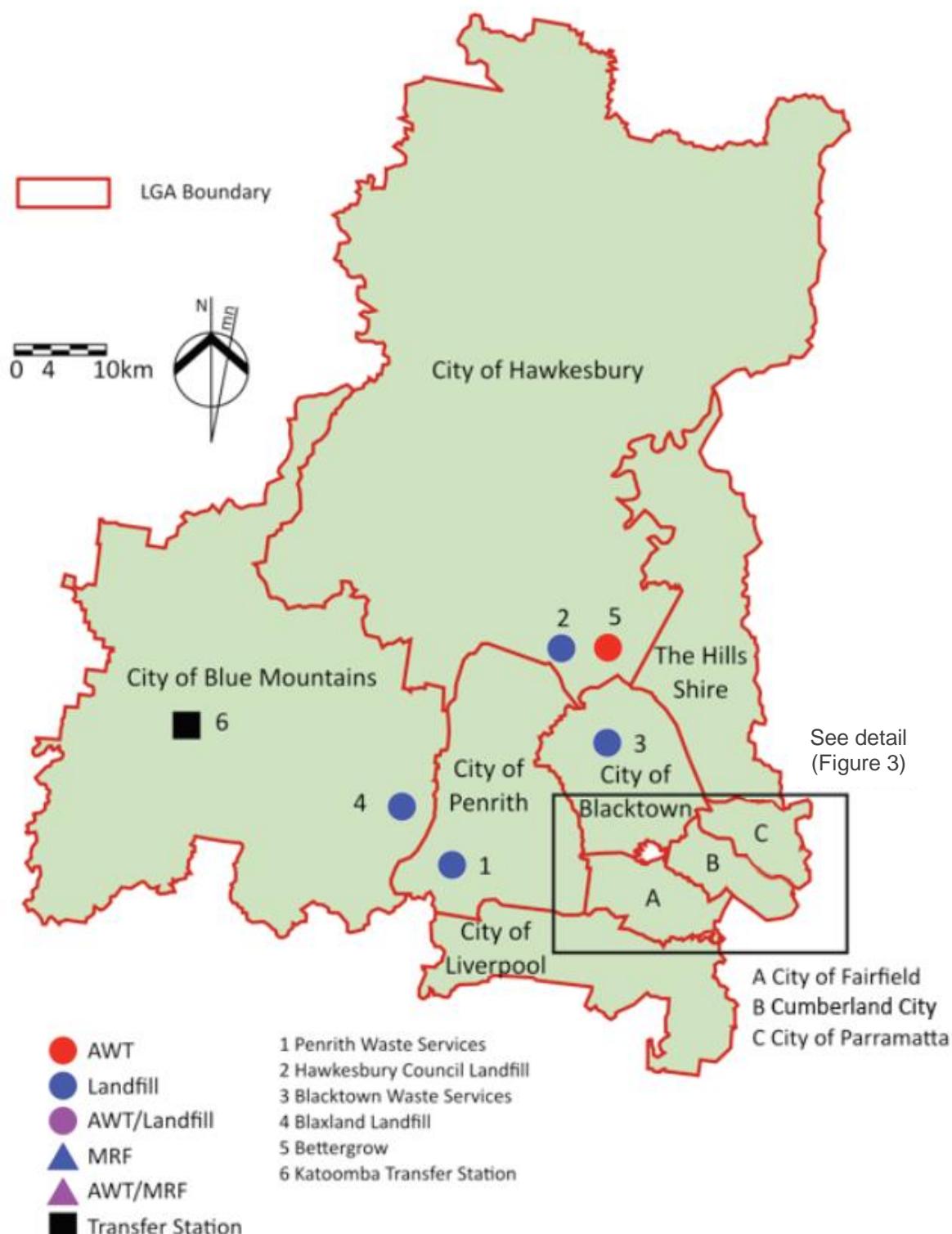
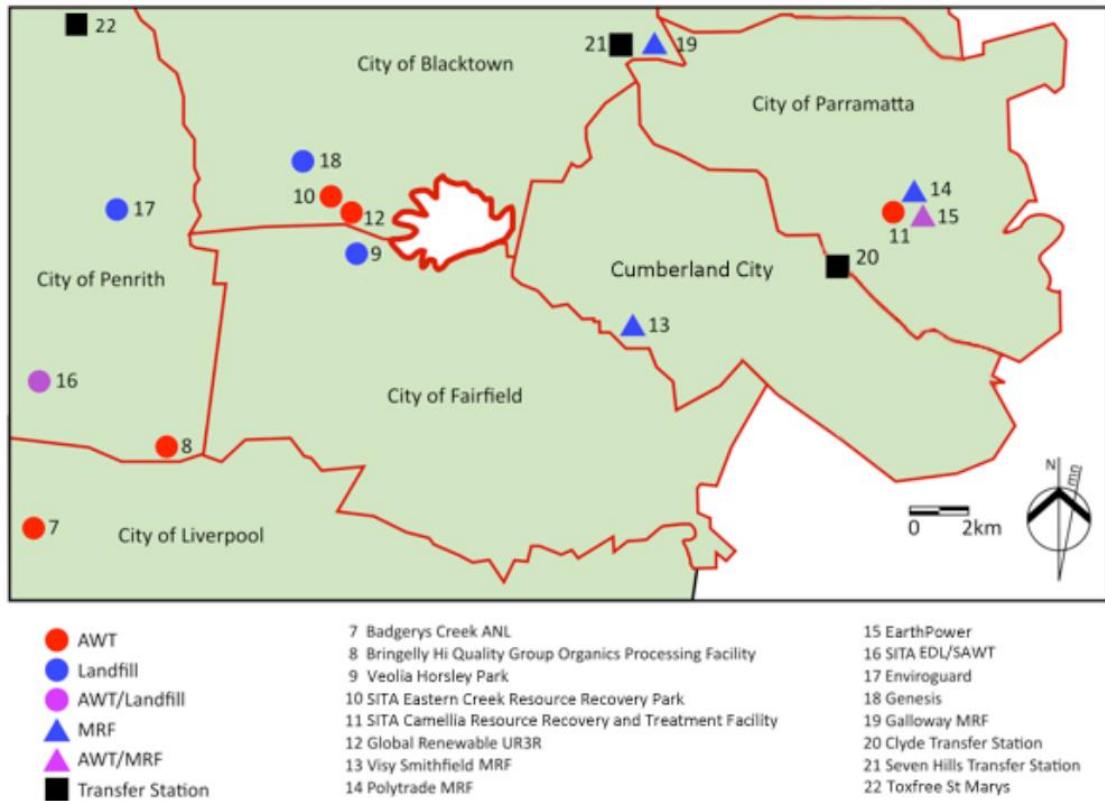


Figure 2 – Waste facilities in the Western Sydney Region



**Figure 3 – Waste facilities in the Western Sydney Region (Detailed)**

Figures 2 and 3 show a shortage of viable putrescible waste landfill within the region and consequently limited competition for putrescible landfill space.

#### 4.2 Current waste facilities used by Penrith

##### 4.2.1 Kemps Creek

The Kemps Creek Suez Alternative Waste Treatment (SAWT) receives two separate streams from Penrith organics (food and garden) and organic rich residual. The facility currently processes up to 134,000 tonnes per annum and is seeking approval to expand to 220,000 tonnes.

Materials from the source separated organics stream and the organic rich residual waste stream are processed and composted separately. This produces:

- High quality compost (used in horticulture and agriculture) and
- Low grade material (used in forestry and mine site rehabilitation)

##### 4.2.2 Elizabeth Drive Landfill

The residual waste from the SAWT process is sent to Elizabeth Drive for landfilling. This process utilises ‘smart cell’ technology, which captures leachate for treatment and landfill gas to minimise greenhouse gas emissions.

Penrith also disposes all organic deplete material and Council clean up material at Elizabeth Drive Landfill.

#### **4.2.3 Smithfield VISY**

Penrith delivers all of its recyclables to VISY's Materials Recovery Facility (MRF) in Smithfield. This site receives in excess of 22,000 tonnes of recyclables from Penrith each year.

#### **4.2.4 Community Recycling Centre (CRC)**

Penrith has established a Community Recycling Centre at St Marys in partnership with Toxfree Solutions, to receive problem waste and hazardous items:

- eWaste
- Sharps
- Household hazardous waste
- Water/Oil based paints
- Used motor/cooking oil
- Lead acid and hand held batteries
- Gas cylinders and fire extinguishers
- Incandescent and compact fluorescent lamps
- Smoke detectors
- Polystyrene

All waste collected at the CRC will be appropriately processed and disposed of by Toxfree.

### **4.3 Waste infrastructure within the WSRWG Region**

Despite the significant waste infrastructure outlined in Figures 2 and 3, the *Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-17* highlights an infrastructure gap of 300,000 tonnes annually for organics and residual processing by 2021.

As a result, the rate of infrastructure development will determine the price of non-source separated organics. If slow, this will result in sharp price increases, as cleaner organics streams are prioritised.

### **4.4 Future waste infrastructure to service WSRWG Region**

The WSRWG Strategy identified a number of developments to alleviate the infrastructure gap:

- Veolia's Woodlawn Mechanical Biological Treatment plant capable of treating an additional 240,000 tonnes per annum of residual waste between 2016-18
- SUEZ lodged an application to service an additional 100,000 tonnes per annum for the processing of residual waste at the SAWT facility (anticipated to come online in 2-5 years)
- VISY scoping an Energy from Waste facility for the processing of residual waste (site projected to service hundreds of thousands of tonnes of waste annually and to open in the next 3-5 years)
- Dial a Dump Industries anticipated to service hundreds of thousands of tonnes of waste through their Next Generation Energy from Waste Plant (projected to open in the next 3-5 years)
- Polytrade to increase capacity at Rydalmerle and Enfield by an additional 100,000 tonnes per annum of recyclables

## CURRENT SITUATION

### 5.0 CURRENT WASTE SERVICES

#### 5.1 Domestic waste service

The breakdown of how Council services the Local Government Area (LGA) is provided in Table 4. It should be noted that Council provides larger/additional bins, or higher frequency collection if requested, for a fee.

**Table 4 – Main Waste Collection Services provided by Council**

Dwelling Type	Service	Residual waste (red bin)		Comingled recycling (yellow bin)		Organics (green FOGO bin)		Clean-up service
	Type	Bin	Serviced	Bin	Serviced	Bin	Serviced	Serviced
<b>SUDs</b>	3-bin	140L	Fortnightly	240L	Fortnightly	240L	Weekly FOGO	On call 4/year
<b>Rural &amp; MUDs</b>	2-bin	240L	Weekly	240L	Fortnightly	None		On call 4/year
<b>MUDs</b>	Collect & return	240L	Twice Weekly	240L	Weekly	None		On call 4/year or weekly for large RFB

Table 5 sets out key statistical data for the Penrith LGA and the quantities of waste managed by Council on behalf of the community based on current Council records and Australian Bureau of Statistics (ABS) data.

Penrith LGA has experienced a 2.44% increase in tonnes of waste generated each year since 2009-10 (excluding clean-up waste), while the population has increased by 1.69% per year. Council saw a significant decrease in the amount of residual waste in 2009-10 following the introduction of the Food and Garden Organics (FOGO) service, and then a further decrease in 2011-12 following the introduction of processing of organic rich residual bins. Recyclables have remained constant at around 19,000 tonnes per year. Clean-up and orphan (including illegally dumped) waste tonnages have increased by approximately 17.5% per year since 2009-10.

**Table 5 – Key Statistical Data for Penrith LGA**

	2004-05	2010-11	2015-16
<b>Number of services</b>	58,979 <sup>a</sup>	65,259 <sup>b</sup>	71,759 <sup>d</sup>
Population	177,554 <sup>a</sup>	184,681 <sup>b</sup>	197,922 <sup>c</sup>
% SUDs	88% <sup>a</sup>	85% <sup>b</sup>	84% <sup>d</sup>
% MUDs	12% <sup>a</sup>	15% <sup>b</sup>	16% <sup>d</sup>
<b>Total waste generation p.a.</b>			
Residual <sup>c</sup>	57,620	31,190	30,350
Recycling <sup>c</sup>	14,220	19,310	19,070
FOGO <sup>c</sup>	0	28,770	36,120
Clean Up Waste <sup>c</sup>	0	2,950	6,450
<b>Total</b>	71,840	82,220	91,990

<sup>a</sup> Penrith Domestic Waste Strategy 2005  
<sup>b</sup> Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-2017  
<sup>c</sup> City of Penrith Waste and Resource Recovery Strategy 2017-2026  
<sup>d</sup> EC Sustainable, Household Kerbside Waste, Recycling and Organics Bin Audit 2017 (DRAFT)

Wastes generated at each household are managed by Council. The service arrangements currently in place are shown in Table 6.

**Table 6 – Current Service Arrangements**

Waste Type	Service Provider	Term	Fate of Materials	Comments	
<b>Collection</b>					
Residuals	SUEZ	2019	Provided below	Main or Standard Collection frequency is provided in Table 4	
FOGO	SUEZ	2019			
Recyclables	VISY	2019			
Clean Up	SUEZ	2019			
Problem waste*	-	-	A Community Recycling Centre at St Marys in partnership with Toxfree Solutions is now open		
<b>Processing</b>					
Residuals from MUDs and Rural households (i.e. organics rich)	SUEZ	2021	Collected and sent to Kemps Creek SUEZ Alternative Waste Treatment (SAWT)	Organics from the residual waste stream produces lower grade material currently used for forestry and mine rehabilitation Residual waste from SAWT process is sent to Landfill (EDL Class 2)	
Recyclables	VISY	2019	Recycling	Sent to the VISY Material Recovery Facility (MRF) in Smithfield	
Organics (FOGO)	SUEZ	2019	Collected and sent to Kemps Creek SUEZ SAWT	The organic material from source separated organic material and residual waste are processed and composted separately. Organics from the FOGO waste stream produces quality compost used in horticulture and agriculture	
<b>Disposal</b>					
Residuals from SUDs (i.e. organic depleted)	SUEZ	2016	Landfill	Non putrescible - landfilled at Elizabeth Drive. Ten years estimated landfill life remaining	
Clean Up	SUEZ	2019	Landfill Steel – recycled		

\*Problem waste includes eWaste, sharps, water based and oil based paints, used motor and cooking oils, lead-acid and hand held batteries, gas cylinders and fire extinguishers, incandescent and compact fluorescent lamps, smoke detector, polystyrene s and household hazardous waste.

## **5.2 Community Support**

Council engaged with the community through a survey (phone and online), community meetings and focus groups to collect feedback on the current domestic waste services. Around half of those surveyed were aware of Council's Waste Strategy.

Key outcomes that support this Strategy are:

- Protecting the environment was identified by the highest percentage of residents as their waste management priority. This was strongest for younger residents in the 18 to 25 age bracket.
- 70% of community members surveyed were satisfied with their waste service and residents indicated that the waste service suits their needs and is reliable. A number of participants using the three bin service stated that moving to a smaller, fortnightly residual waste service had changed their waste practices and increased their recycling.
- 30% of people surveyed were dissatisfied with their waste service and required additional services for waste and/or recycling collection or larger bins if the services were to remain fortnightly.
- Outcomes indicated that SUD householders currently receiving a two bin service were neutral as to whether they would consider moving to a three bin service or continue with their existing services. However, there was generally interested in obtaining a green bin for food waste and lawn clippings.
- It was further identified that 70% would support a user pay option based on a scaled system rather than a fixed cost per household for the bin service that Council currently offer. In other words, if more services were required or a higher frequency of services that this would be on a user pay approach.
- As a whole, the focus groups expressed concern as to community information distribution and would find it far more effective if Council's calendar, local newspaper and rates notices were utilised more effectively to share community information. There was a lack of awareness that residents could change their service.
- Residents with green bins were largely satisfied with the provision of the bags and used the bags for their food waste. A few residents were concerned that the number of bags were insufficient and ripped easily. Most people surveyed indicated that they would continue to use the green bin for food waste without the green bags (64%, n=340), although focus group participants generally did not want to see the green bags discontinued.
- 47% were unaware of the waste levy charge but would change their behaviour now that they were aware of it, to reduce the amount of their waste ending up in landfill. This indicates where stronger communication by Council may influence community choices.

The community consultation also identified wide support for clean-up services with those consulted noting they would accept a reduction in frequency from four to two free annual clean-up services per household.

## **5.2 Public Place Waste Management**

Providing public waste management services in the Penrith LGA is undertaken to avoid litter. Council currently provides a public place waste management service by provision of street litter bins, parks bins, pet excrement bins and bins at public events. Waste from public areas is disposed of to landfill.

Penrith's *Litter Management Strategy 2013-2016* includes an Action Plan, which outlines a number of key actions Council is taking in conjunction with identified community partners to reduce litter and promote litter as a problem that is everyone's responsibility requiring a 'whole of community' approach.

### 5.3 Kerbside Bin Composition

Council engaged EC Sustainable to conduct a comprehensive audit of the domestic bin systems in March and April 2017. The audit analysed the domestic waste stream as presented at collection and did not include diversion rates post collection; e.g., at the SAWT facility.

The 2017 Waste Audit identified that on average the residual bin contains the following material which could be captured in the recycling bin or FOGO bin:

- 17.73% recyclable material
- 36.89% organics (FOGO); 49.44% to 53.55% in rural and kerbside presented MUDs

Table 7 provides the average diversion rates for recycling and organics (FOGO), and the associated contamination rates. It was noted that the highest contamination rates were recorded in social housing for recycling (27.97%) and organics (16.32%), which affects Council's average. The three bin fortnightly waste service had contamination rates of the organics bin of 4.37% and 3.02% for weekly waste.

**Table 7 – Average diversion rates and contamination rates**

Council Average	Recycling	Organics
Diversion Rate (%)	72.01	83.39*
Contamination Rate (% by weight)	19.71	4.68*

\* This only includes households with an organics service.

The audit also identified that approximately 19.8 items per household per week are eligible under the CDS, which represents 4.82% of the total waste stream.

### 5.4 Public Place Bin Composition

Council engaged EC Sustainable to conduct a comprehensive audit of the Public Place Bin Composition in March and April 2017. The audit analysed the waste streams as presented at collection for both Street Litter Bins and Parks Bins.

Table 8 provides waste composition in both Street Litter Bins and Parks Bins. It was noted that 15.83% of the total waste stream in the Street Litter Bins and 10.56% of the total waste stream in the Parks bins are eligible under the CDS.

**Table 8 – Public Place Bin Waste Composition**

Material	Street Litter Bins	Parks Bins
Recycling (% by weight)	40.08	31.21
Organics (% by weight)	35.47	33.03
Residual waste (% by weight)	24.45	35.76

## **6.0 WASTE REDUCTION AGENDA**

Penrith Council is a recognised leader in domestic waste and resource recovery and is acutely aware of community interests. Council is striving to continue improving our diversion of waste from landfill and other sustainable practices to achieve the State targets for resource recovery of 70% and landfill diversion of 75% by 2021-22.

### **6.1 Diversion and Resource Recovery**

Following the introduction of the FOGO service and processing of residual organics, diversion from landfill has increased from 20% in 2004-05 to 60% in 2015-16. Council has exceeded the WSRWG Strategy target of 58% diversion for 2017 since 2010-11; however, diversion has not improved beyond 60%. This is in large part due to the growth of clean up tonnages (refer to Table 5). In 2015-16 organics made up about two-thirds of the total diversion of waste from landfill. This is a substantial contribution, and indicative of the extent of opportunity for further diversion. As discussed in Section 5.1, around 50% of the rural and MUDs residual waste stream is FOGO material.

### **6.2 Waste Generation Rates**

As shown in Table 9, when compared with other councils in the Western Sydney region, Penrith's per capita waste generation is higher than the average of 7.8 kg/capita/wk. It is also higher than the 2021 target of 7.5 kg/capita/wk.

This is a direct result of the implementation and popularity of the FOGO service offered to residents. The FOGO is the largest organics waste stream across comparative councils with a generation of 3.5kg/capita/wk. This has allowed the residual waste stream (3.0kg/capita/wk) to be one of the smallest rates across comparable councils. This reinforces the importance of resource recovery and diversion from traditional landfill practices.

**Table 9 – Comparison of per capita waste generation – 2011-12**

Council	Generated (kg/capita/week)			
	Dry Recycling	Organics	Residual	Total
The Hills	1.9	2.4	4.3	8.5
Blue Mountains	2.1	-	5.8	7.9
Hawkesbury	1.9	-	6.4	7.7
Penrith	2.1	3.5	3.0	8.7
Liverpool	1.7	1.8	4.2	7.7
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Western Sydney	1.6	1.1	5.0	7.8
NSW	1.9	1.4	4.3	7.6

## **7.0 PROBLEM WASTE**

### **7.1 Reduce incidence of litter**

The incidence of illegal dumping is countered through the *Western Sydney Litter Plan 2016-2021*, which outlines four objectives for the next five years:

- Educate drivers on arterial roads on reporting littering from vehicles and the possibility of getting caught littering from vehicles
- Promote litter as a key challenge to senior Council staff and elected representatives

- Reduce the number of cigarette butts littered in at least one shopping centre strip per participating Council
- Reduce the volume and cost of cleaning up food and drink containers/packaging in high weekend use recreational parks within the WSRWG region

## **7.2 Reduce incidence of illegal dumping**

The incidence of illegal dumping is reduced by providing adequate services for the collection of bulky waste, education around the associated problems and community deterrence. Council has a strong presence in each of these areas.

### **Drop off recycling centres**

Penrith City residents have confirmed through consultation the value of having the drop off recycling centres and saw a responsibility to dispose of items such as batteries and electrical in the correct way. For some, the regular drop off events can be inconvenient due to location, timing or difficulty transporting the items. The St Marys drop off centre provides further service to promote responsible disposal.

## **8.0 WASTE INDUSTRY FLUIDITY**

As outlined in the Regional Strategy, there is a shortage of putrescible landfill space in the region and more waste processing facilities will be required to achieve the NSW WARR diversion target by 2021. The WSRWG response to the recent Energy from Waste Technology Inquiry identified the following key issues that may affect management of waste generated in the Penrith LGA:

- Shortfall in required capacity in mixed waste treatment facilities (such as Advanced Waste Treatment facilities used to process household garbage waste), energy recovery facilities, recycling facilities and organics processing facilities. The low available capacity of putrescible landfill was considered a risk to councils.
- Councils have indicated they may struggle to reach their resource recovery targets based on existing resource recovery and waste processing options available to them.
- Rollout of the Container Deposit Scheme (CDS) - required collection infrastructure for the community to retain deposits will not be able to be delivered at the rate required.
- Councils are supportive of the NSW Energy from Waste Policy and, in particular, support the resource recovery criteria requiring removal of valuable resources prior to treatment. There is also a role for the production of refuse derived fuel (RDF) as an output of mixed waste processing of municipal waste to reduce the volume of residual waste landfilled.

## FUTURE DIRECTIONS

Council will look at all services currently provided and proposed and identify potential for improved resource recovery and efficiencies.

Under its current DWS, Council has made significant progress in the management of domestic waste. The success of Council's strategic approach has now led to a broader review of the potential to improve waste management and resource recovery across all Council managed waste streams.

This Strategy aims to build upon the existing document incorporating areas of innovation, efficiency, processing/resource recovery, collection technologies and resident education.

Penrith has seen a steady increase in the amount of waste generated per capita and a sharp increase in the volume of clean up waste per capita. The scope for Council to address generation of waste from residents is limited, as waste generation is directly linked to consumption. Council can assist residents to reduce the amount of waste generated. Education campaigns and the provision of community recycling centres where second-hand goods can be repaired and/or resold also assist in waste reduction.

The FOGO service and diversion of organic depleted waste supports Council's significant landfill diversion rate and should be maintained. Table 10 shows opportunities for Council to increase diversion further.

With the increase in the number of mixed-use precincts, Council will investigate the opportunity to offer waste collection services to commercial/retail premises within mixed-use developments. The introduction of new and enhanced waste collection services maintains our trajectory towards continued improvement in waste minimisation and diversion across the City.

**Table 10 - Opportunities for increasing resource recovery and landfill diversion**

	Waste Stream	Opportunity	Contract Considerations
Domestic	Residuals from MUDs and Rural households (i.e., organics rich)	Investigate option to implement FOGO collection in MUDs and rural households. For consistent food and garden organic collection across all SUDs and potential for kerbside MUDs	FOGO Services to be available to all SUDs; i.e., provide greater equity of service by providing FOGO service to all SUDs with mechanisms to phase in FOGO collections to MUDs
	Residuals from SUDs (i.e., organics depleted)	Look for options in the market for provision of this waste stream to produce a Resource Derived Fuel (RDF) to further reduce waste to landfill, once resources have been recovered from the stream	RDF as an inclusion
	FOGO	Council utilises the findings of annual audits and community support to focus education and support to increase diversion from landfill	Continue FOGO processing
	Recyclables	<ul style="list-style-type: none"><li>Continue to provide the waste education services currently implemented to reduce contamination rates</li><li>Consider optional capacity bins to suit different households</li></ul>	Assess the potential impacts of CDS on recycling

	<b>Waste Stream</b>	<b>Opportunity</b>	<b>Contract Considerations</b>
	<b>Clean Up</b>	<ul style="list-style-type: none"> <li>Council could provide a Community Recycling Centre (CRC) to recover unwanted goods for repair (if necessary) to be sold as second hand goods. Council should investigate opportunities to partner with a social enterprise which would have multiple positive impacts on the community</li> <li>Consider reuse and resource recovery options for clean-up collection</li> </ul>	<ul style="list-style-type: none"> <li>Separate collection and disposal contracts to create a dynamic where collection contractors are incentivised to divert waste from landfill</li> <li>Process mattresses under the regional mattress processing contract</li> <li>Mattresses to be considered separately</li> </ul>
	<b>Problem waste</b>	Penrith has established a CRC in partnership with Toxfree Solutions at a Toxfree site in St Marys	Broaden recycling materials accepted for "drop off"
<b>Council Managed Waste</b>	<b>Orphan Waste</b>	<ul style="list-style-type: none"> <li>Orphaned wastes will be included in the Clean up services</li> </ul>	<ul style="list-style-type: none"> <li>Included in Clean up collection services</li> </ul>
	<b>Street Sweepings</b>	<ul style="list-style-type: none"> <li>Street sweepings will continue to be managed by Council's street sweeping services</li> </ul>	<ul style="list-style-type: none"> <li>Street sweepings will be aggregated and included as part of the Collection services</li> </ul>
	<b>Dead Animals</b>	<ul style="list-style-type: none"> <li>The collection of dead animals will be managed by Council as current arrangements</li> </ul>	<ul style="list-style-type: none"> <li>The collection from the Council Depots will be streamlined to align with the new collection services</li> </ul>
	<b>Construction and Demolition wastes</b>		<ul style="list-style-type: none"> <li>Review tipping practices for Construction and Demolition wastes across Council including existing contracts and their expiry</li> </ul>
	<b>Tyres</b>		<ul style="list-style-type: none"> <li>Investigate options under Product Stewardship (Tyres) – Federal Government</li> </ul>
<b>Public</b>	<b>Residual</b>	Integration of "Smart Bins" into public domain maintenance practice	Potential scheduling of smart bin collection
	<b>Recycling</b>	The CDS will be implemented in December 2017 to address the impact of beverage containers on public litter. The CDS should result in a reduced volume of litter	Contract submissions to demonstrate CDS benefits to Council
	<b>Litter</b>	<ul style="list-style-type: none"> <li>Update the Penrith Litter Management Strategy 2013-2016</li> <li>Align Strategy with State Strategy Objectives, and seek funding under State Government Programs</li> </ul>	
	<b>Illegal Dumping</b>	<ul style="list-style-type: none"> <li>Develop an Illegal Dumping Strategy</li> <li>Align Strategy with State Strategy Objectives</li> </ul>	

The current suite of waste contracts is due to expire in 2019. As a guidance document, this Waste and Resource Recovery Strategy will support Council in the development of an informed specification to request innovative responses from the marketplace for the next contract period.

For more information about this strategy,  
please contact the Waste Services team on (02) 4732 7777.