

MOLINO STEWART
ENVIRONMENT & NATURAL HAZARDS



Lithgow City Council

Lithgow Waste Strategy Review

Final Report





Lithgow Waste Strategy Review

FINAL REPORT

for

Lithgow City Council

by

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1 INTRODUCTION

1.1 BACKGROUND

Lithgow City Council (the City) offers a range of waste management services for the community including:

- Domestic and commercial kerbside collection of municipal solid waste (MSW) and dry recyclables (two bin system);
- Public place litter collection;
- Domestic bulk waste collection;
- Greenwaste collection;
- Operation of the Lithgow Solid Waste Facility (SWF) including the landfill, weighbridge and greenwaste mulching (contracted) and five small village landfills;
- Four small rural waste transfer stations catering for waste disposal; and
- Associated education, promotion and community empowerment programs.

The period for the City's current Waste and Recycling Strategy 2011-2016 expires this year and the City is now in a position to review progress to-date and evolve its waste and resource recovery strategies to provide direction over the next 10 year period.

1.2 OBJECTIVES

The objectives of this strategy are to:

- Provide the City with a strategic direction for waste management in the short and longer term;
- Encourage efficient and effective waste management in line with the waste hierarchy (Avoid, Reduce, Reuse, Recycle, and Dispose) and the NSW Government targets;
- Provide infrastructure and services which are efficient, flexible and accessible to the community; and
- Develop waste initiatives that are suitable for the City's corporate objectives sensitive to the financial capacity of the City.

2 WASTE GENERATION PROFILE

The solid waste generation profile for the Lithgow LGA is outlined in this section.

2.1 WASTE VOLUMES

It is estimated that across the whole of the Lithgow LGA approximately 63,940 tonnes of solid waste is generated per annum (see Table 1). This comprises approximately:

- 47,950 tonnes of waste that is landfilled;
- 2,280 tonnes of green waste;
- 11,700 tonnes of virgin excavated natural material (VENM)/clean fill used as landfill cover material; and
- 2,000 tonnes of dry recycled material including paper, glass, metal and plastics.

These figures include all solid wastes collected, hauled and disposed at the landfills and transfer stations across the urban and rural areas within the LGA, excluding on farm disposals by farmers.

Note the quantum is an estimate as only the Lithgow SWF operates with a weighbridge. The Lithgow SWF volumes are based on 2015/16 data. In 2016/17, the wastes received at the rural landfills were measured for three months to derive annual estimates of materials.

If the VENM quantum is included then approximately 18% of the total waste volume is recovered for recycling and reuse.

If VENM is excluded and the focus is on just dry recyclables (ie paper/cardboard, glass, plastics and metal) then approximately three percent of the waste stream is recovered and reused.

2.2 WASTE TYPES

With respect to the different categories of waste, the indicative breakdown is shown in Table 1. This is based primarily on the waste deposited at the Lithgow Landfill, (which includes material transferred from the rural

sites and kerbside collections) and the smaller rural landfills.

Further details of the waste stream composition are discussed below and the facilities are discussed in Section 3.

Table 1 Lithgow LGA Waste Stream Volumes (Estim)

Waste Stream	Volume (tonnes per annum)
MSW	26,719
C&I	4,921
C&D	16,302
VENM	11,717
Glass	564
Paper/cardboard	579
Metal	736
E-waste	15
Plastics	107
Green	2,279
TOTAL	63,939

2.2.1 Mixed Dry Recyclables

The volume of mixed dry recyclables collected and managed at the Lithgow SWF totals approximately 2,000 tonnes per annum. This quantum includes glass, paper, metal, E waste and plastics. .

There is some source separation of metals at all the landfill sites but not the rural transfer stations. However recyclables are generally not being collected from the rural landfills, so

tends to contribute to the landfill volumes at these sites.

E-waste is only collected at the central Lithgow facility.

2.2.2 C&D and C&I

In 2015-16, approximately 16,303 and 4,921 tonnes of C&D and C&I waste respectively were collected at the Lithgow SWF. The C&D includes the clean fill tonnages of 11,082 collected at the Lithgow SWF.

The smaller rural landfills were designed and built to service the rural population, thus intended for receipt of primarily small quantities of MSW, with minimal amounts of C&D waste.

However recent experience would suggest that there may be commercial entities operating waste collection businesses using the small un-manned rural landfills as a free destination for various wastes, including C&I and C&D.

At the small rural landfills the split of waste types and volumes is estimated to be MSW 5,480 tonnes per annum; 157 tonnes per annum of metal and 200 tonnes of VENM. C&I and C&D waste was not measured separately as these are at present landfilled as MSW at these sites. Similarly, green waste is mulched and reused onsite in site rehabilitation.

It is predicted that the C&I volumes are likely to be higher due to illegal dumping, however the City has installed surveillance cameras at a number of locations to assist in this regard.

2.2.3 Green waste

It is estimated that approximately 2,279 tonnes of green waste is collected at the Lithgow SWF. Historically this has been landfilled but is now being mulched and reused onsite. Additional material is collected at the rural landfills but the volumes are not separately recorded.

NetWaste, a voluntary regional waste group formed in 1995 to provide collaborative approaches to waste and resource management of which Lithgow is a member, recently facilitated a collection contract

involving multiple nearby councils including Bathurst, Blayney and Cabonne for a weekly residential kerbside food and garden waste collection by JR Richards & Sons (JRR). The waste is to be transported to an industrial scale composting facility at Blayney run by Australian Native Landscapes. Lithgow has chosen not to be a part of this contract as it plans to use its green waste supply as phytocapping material within the final cover applied at the Lithgow SWF. At the rural landfills it is mulched and reused onsite for rehabilitation.

3 CURRENT SITUATION

3.1 MANAGEMENT

The Environment & Development Department of the City is a strategically focused unit. Its waste management functions primarily include:

- Collection of household waste and recyclables
- Collection of municipal waste and recyclables
- Operation of waste disposal facilities including the Lithgow Solid Waste Facility (SWF), Wallerawang, Portland, Capertee, Cullen Bullen and Glen Davis Landfills, transfer stations at Angus Place, Hampton, Meadow Flat and Tarana and the Lithgow Recycling Centre
- Disposal of bulk commercial wastes; and the
- Management of former landfills.

To provide the services in a timely and cost effective manner a number of contractors are utilised. The kerbside garbage and recycling service is currently undertaken by JRR. The Lithgow SWF is managed under contract by Henry Plant Hire (HPH).

3.2 OVERVIEW OF FACILITIES

An overview of the existing solid waste management facilities is provided below.

3.2.1 Lithgow Solid Waste Facility

The Lithgow SWF (Lithgow landfill) is located off Geordie Street, Lithgow and is the City's primary landfill. It has operated at this location for over 75 years. It is a Class 1 landfill licensed to accept MSW as well as certain regulated waste. Historically, a recycling centre operated separately adjoining this site, however with kerbside collection of recyclables, this is no longer required. There is a small recycling bay at the landfill for; cardboard, E-waste, waste oil and drumMuster.

The Lithgow Landfill accepts and disposes of approximately 50,000 tonnes per annum of solid waste.

There is also approximately 11,717 tonnes per annum of VENM/clean fill accepted by the facility and re-used as landfill cover material. In addition, approximately 2,000 tonnes per annum of mixed recyclables are sorted and recovered, principally from the kerbside collection service. The green waste quantity received is limited at 2,280 tonnes per annum. Historically this has been landfilled but is now being mulched and reused onsite. It is also noted that the 11,717 tonnes per annum of VENM received in 2015/16 is higher than normal due to material being received from roadworks being undertaken by Roads and Maritime Services on the Great Western Highway.

Definitive plans have recently been developed for upgrading and expanding the landfill.

Ongoing development of additional airspace over a further five stages has been designed, (see report by Amaral, 2016) although the sequencing of Stages 2 and 3 has been reversed. This adjustment will enable the filling and capping of the eastern portion of the landfill to be completed more quickly.

Currently Stage 1 is being used to the final design.

Upgrade works currently underway include designing and constructing improved water management strategies, including the diversion of clean stormwater runoff around the waste pile.

The Landfill Environmental Management Plan (LEMP) is currently being revised to reflect the design and operational improvements being made to the site. Through the adoption of the LEMP, the City is seeking to update the EPL. The City continues to work with the EPA on this matter.

An independent report obtained by the City suggests the remaining landfill life is approximately 22 years. This assessment was based on the assumption that the waste inflow would be approximately 25,000 tonnes per annum.

Clearly, based on the current waste inflow being almost double this figure, the landfill may

well be full in about 10 - 12 years time. It is therefore important for the City to maximise its resource recovery and diversions and plan for the provision of additional landfill air space.

Furthermore, consideration has to be made for the destiny of wastes currently disposed at the small rural landfills dispersed throughout the LGA. If these low grade facilities close then even more waste will need to be disposed at the Lithgow SWF, further shortening its remaining life even more.

3.2.2 Small Rural Landfills

The City currently operates five small rural landfills, with the locations, waste tonnages and proposed closure dates shown in Table 2.

The landfills accept putrescible and non-putrescible waste. While separated out on site, green waste volumes are included in the landfilled volumes. The material is mulched and reused onsite for rehabilitation. The C&I and C&D volumes are also included in the landfilled volumes.

The operational lives of the landfills at Cullen Bullen, and Glen Davis are due to end by 2020.

Portland was due to close a year later, however based on a new filling plan and life expectancy analysis for Portland (Amaral 2017a, 2017b), the City believes the operational life of Portland can be extended to 2027. As of June 2017, this was yet to be adopted by the City.

Capertee has approximately eight years remaining, out to 2025.

The scheduled landfill closure date for Wallerawang had been 2017/18; however based on a new filling plan and life expectancy analysis for this site (Amaral 2017b, 2017c), the City believes the operational life of Wallerawang can be extended to 2035.

These relatively small somewhat basic landfills are not staffed so residents are requested to separate building waste, green waste, steel and putrescible waste at all the facilities. Signage indicating this requirement is provided on site. However, ultimately these materials are landfilled onsite. While the City employs a

rural tip controller, whose role it is to manage the day to day activities of the small rural landfill sites across the LGA, this person is only visiting each site intermittently. As such, there is only limited oversight and compliance with the request is not assured.

Further, there is no weighbridge at any of these facilities hence there is no record of what waste is being received, no revenue in takings and no financial recovery against any waste deposited at these facilities. Having the sites unstaffed also poses challenges in regards to the nature of waste being deposited at these sites.

There is evidence to suggest that commercial waste management operators are taking advantage of the availability of these unmanned facilities to dispose of wastes free of charge. However the City has installed surveillance cameras at a number of locations to assist in this regard.

Management of the facilities is somewhat limited with no application of daily cover and no effective leachate management systems in place. It was for these reasons that in negotiations with the City, the former Department of Environment, Climate Change and Water (DECCW) required the rural landfills be closed as soon as possible with all waste then transferred to the central Lithgow facility (Molino Stewart 2010).

Table 2 Rural Landfill Waste Receipts & Closure Dates

<i>Landfill Name</i>	MSW	VENM	Metal	Estimated Annual Waste Receipts: 2016/17 (t.p.a).	Expected Landfill Closure Date
<i>Cullen Bullen</i>	960	0	0	960	2019/20
<i>Capertee</i>	720	0	53	773	2024/25
<i>Glen Davis</i>	320	0	0	320	2019/20
<i>Portland</i>	1,680	0	70	1,750	2026/27
<i>Wallerawang</i>	1,600	200	34	1,834	2034/35
TOTAL	5,280	200	157	5,637	

a) Cullen Bullen Landfill

Cullen Bullen Landfill has been in operation for more than 40 years. Throughout this period it has primarily received municipal waste.

The site consists of:

- A trench for disposal of MSW; and
- Designated areas for the placement of C&D rubble and green waste.

b) Capertee Landfill

Capertee Landfill has been in operation for more than 30 years. Throughout this period it has primarily received MSW.

MSW is disposed in an earthen trench. Metals may be separated, and green waste and clean soil may be used on site for landscaping and rehabilitation works however these materials are generally buried as waste.

c) Glen Davis Landfill

The establishment of this site coincided with the beginnings of the nearby oil shale mine during the 1930s. Throughout its operation the depot has been the main local receptor for MSW. Access to this depot is restricted to Glen

Davis and Glen Alice residents. The site consists of the current municipal waste trench and building and green waste stockpiles.

d) Portland Landfill,

The site has been in operation since the 1930s with approval for the disposal of night soil.

The landfill site is divided into three main areas.

- The MSW area, comprising several open waste disposal cells dug into the ground;
- The differentiated waste area where scrap metal, green waste and building waste are initially stockpiled before burial; and
- The former nightsoil area.

e) Wallerawang Landfill

This landfill has been in operation for more than 50 years. The depot has primarily received municipal waste with some sump oil, tyres, scrap metal and builders rubble.

The site consists of:

- A trench for the placement of MSW;

- Designated areas for the placement of C&D rubble and green waste surrounded by earth mounds; and
- Rehabilitated areas.

3.2.3 Small Rural Transfer Stations

The service provider JRR collects the two bin types from each transfer station as described in Table 3 and transfers them to the Lithgow SWF where the wastes are landfilled.

Table 3 Rural Transfer Stations

Facility	Waste Type & Equipment	Bin Collection Frequency
Hampton	MSW: 1 x 23 m ³ hooklift bin (roof) Mixed Recyclables: 12 x MGB	weekly
Meadow Flat	MSW: 1 x 23 m ³ hooklift bin (roof) Mixed Recyclables: 10 x MGB	weekly
Tarana	MSW: 1 x 15 m ³ hooklift bin Mixed Recyclables: 8 x MGB (a hooklift bin with roof for MSW will be completed late 2016)	weekly
Angus Place	MSW: 2 x 15 m ³ hooklift bins Mixed Recyclables: 10 x MGBs	weekly

3.3 KERBSIDE COLLECTION

Kerbside waste collection services are primarily governed by the contract between the City and JRR. Kerbside collection is provided to a number of villages and Lithgow suburbs. The collection route and day of pick up is outlined in Appendix A.

The current domestic service includes the weekly collection of a 240litre MGB for MSW and since November 2013 a 240 MGB for fortnightly recycling collection has been provided to collect standard recyclable items of glass, aluminium, steel, plastics, paper and cardboard.

The MSW is disposed at the Lithgow SWF.

The recyclable materials are transported by JRR to Poytrade Recycling in Rydalmere, Sydney for further management. An average of 16 trips to Sydney is made per month, transporting 120 tonnes of recyclables per month.

Urban areas of Lithgow, Portland and Wallerawang receive a bulky household goods kerbside collection service in September and March each year.

3.3.1 Special case waste streams

a) Pressure Vessels (gas bottles), batteries, paints, oils

Through NetWaste, permanent storage units have been located at the Lithgow SWF for the collection of these wastes. Gas bottles are separated and recycled

b) Tyres

Tyres are only collected at the Lithgow SWF. Only residential tyres are accepted with a limit of the disposal of six tyres per vehicle. Tyres received are landfilled.

c) E-waste

Through and arrangement with Netwaste, E-waste is collected at the Lithgow SWF. From there it is collected and transferred to a site in Sydney.

d) White Goods

White goods are collected and stored separately to scrap metal. This includes fridges, washing machines, dryers etc. and sent for recycling.

e) Event Management

The City supports waste-wise events and provides services and advice to those running public events in regards to recycling and waste management. The City provides a number of 240L garbage bins on request for such events.

3.4 REGULATORY FRAMEWORK

Table 4 lists the legislation and other statutory documents which are of relevance to the management of various wastes in the Lithgow LGA.

The details of the relevance for each instrument are provided and discussed in Appendix B.

Table 4 Legislative Framework.

Statutory Instrument	Relevance for Lithgow City Council
<i>National Greenhouse and Energy Reporting Act 2007</i>	Under the NGER Act there is a requirement to report emissions if they exceed 50,000 t CO ₂ per year.
<i>Local Government Act 1993</i>	This Act prescribes the rules for the application of the waste levy.
<i>Environmental Planning & Assessment Act 1979</i>	This Act requires operators of waste facilities above a certain size to hold an Environment Protection Licence.
<i>Environmental Planning & Assessment Regulation 2000</i>	This Regulation outlines the steps required to gain approval for a new landfill or landfill expansion.
<i>Protection of the Environment Administration Act 1991</i>	This Act gives powers to the EPA to direct Councils to contribute to environmental protection or to cease anything that adversely affects environmental protection.
<i>Protection of the Environment Operations Act 1997</i>	The POEO Act details the thresholds for the various waste facilities that require Environmental Protection Licenses. It outlines the penalties that apply for certain environmental offences. It establishes the waste and environmental levy which is payable on waste from the regulated area being disposed of at a licensed facility.
<i>Protection of the Environment (Waste) Regulation 1996</i>	This Regulation establishes requirements relating to non-licensed waste facilities.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	The WARR Act sets forth the waste hierarchy of: <ul style="list-style-type: none"> • Avoid • Resource Recovery • Disposal
<i>Contaminated Land Management Act 1997</i>	This Act sets out the process of investigating and remediating contaminated land.
<i>State Environmental Planning Policy (Infrastructure) 2007</i>	This SEPP outlines the conditions under which a waste facility may be approved.
<i>Environmental Guidelines: Solid Waste Landfills</i>	This Guideline details a consistent and environmentally responsible approach to managing landfills.
<i>Draft Environmental Guidelines: Solid Waste Landfills</i>	These guidelines provide guidance for the environmental management of landfills in NSW by specifying a series of best practice measures called 'Minimum Standards'. This includes directions for the provision of a phytocap to seal a landfill.
<i>Environmental Guidelines: Assessment, Classification and</i>	This Guideline provides guidance with regard to liquid and non-liquid waste, including transport and disposal.

<i>Statutory Instrument</i>	<i>Relevance for Lithgow City Council</i>
<i>Management of Liquid and non-liquid Waste</i>	
<i>National Waste Policy</i>	This Policy sets direction and identifies strategies to guide Councils with regard to waste reuse, disposal and management.
<i>NSW Container Deposit Scheme</i>	From July 2017, eligible beverage containers can be returned for a 10-cent refund. This will include containers in kerbside collections. The City may operate collection depots.

3.5 COMMUNITY ENGAGEMENT AND EDUCATION

To help educate the community about the importance of waste minimisation, the City is actively engaging in education and engagement programs designed to encourage resource recovery and increase understanding of the benefits to the local community and surrounding environment of recycling and waste avoidance.

3.5.1 The City's programs

a) Management

Under the City's contract with JRR, JRR is responsible for all aspects of community education in relation to the delivery of the collection services. The deliverables specified for this include:

- the design and production of educational material;
- quarterly education strategy meetings with the City; and
- an education officer (approximately 10% of a full-time equivalent position).

To provide the community with relevant information, JRR has provided the City with a dedicated waste management website (<http://lithgowwaste.com.au/>).

b) Education

Through this arrangement, the City has run numerous education programs to communicate its key messages relating to waste. A company called Envirocom has been engaged by JRR to design and implement a waste education program through primary, secondary and tertiary education institutions. These programs include:

- Early Learning Education Programs: a free training session for Early Learning Centre (ELC) staff to provide knowledge, educational tools and resources on a range of waste minimisation practices such as recycling and organics diversion, as well as explain the environmental

issues associated with waste (held in 2015).

- Primary School Education Programs: available to all Primary Schools and aims to increase knowledge of students, teachers and parents/carers on a range of recycling, waste management and waste minimisation issues and management options.
- Community Education Programs: these are targeted at the community to provide awareness on waste management and avoidance techniques (an organic recycling workshop for the community in May 2016).

Teacher resources are also made available via the waste management website.

Envirocom has also overhauled the City's waste website in order to promote recycling, green waste collection and bulky waste collection.

There has been some publishing of factsheets and brochures, as well as the issuing of press releases promoting green waste and bulky waste collection services.

Envirocom recently gave take home surveys to parents of school students who had benefited from the waste education programs. The surveys aimed to gauge the success of the education initiatives in helping school children develop positive attitudes to recycling and waste management, and changing their behaviours. While there has been generally positive feedback from the schools, the surveys have not been returned yet so data is not available to measure the outcomes.

It is recommended the program be reviewed and revised to provide a broader community focus.

c) Engagement

To assist residents with their waste and recycling, the City has also developed a 'Waste Info App'. This provides a collection calendar, waste disposal information and details of waste services and facilities. It is available to download from the waste management website.

News items and other regular updates are provided to the community through the City's

Facebook page:
<https://www.facebook.com/LithgowCityCouncil>,
a weekly news bulletin via email and a
quarterly "Council Connections" newsletter.

3.5.2 NetWaste Strategies

NetWaste is a collaborative environmental management project sponsored by the NSW Environment Protection Authority (EPA) and the Central West (CENTROC) and Orana Regional Organisation of Councils (OROC), located in the central and western regions of New South Wales. The region comprises 26 councils, including Lithgow City Council (NetWaste, 2016).

The *2013 – 2017 NetWaste Strategic Waste Plan* updates the *NetWaste Strategic Waste Plan - July 2012 to June 2015*. It recognises the community's changing attitudes and behaviour to achieving sustainability. The pursuit of sustainability through better waste management practices has shifted from the issues of how to collect waste and where to dispose it, to advancing the development of resource recovery and recycling through efficient processes resulting in social, economic and environmental gains.

The strategies identified in the Strategy are very broad, which allows an adaptive approach to education in the various council areas. NetWaste runs a number of regional projects such as Waste to Art. A different council hosts this exhibition each year, and a problem waste theme is the focus at each exhibition.

NetWaste also runs an extensive school education program. This differs across council areas based on each area's needs. Litter Workshops were run for Lithgow schools.

3.6 FINANCIAL MANAGEMENT

The City raises approximately \$4.16 Mil pa from the waste services charge component of landholder's rates. There are 8,880 residential properties, 2,343 rural properties and 620 businesses levied with the charge.

There are two key waste management contracts awarded by the City, namely to JRR

and to HPH. The details of each are outlined below. The total annual cost of the combined waste management contracts is \$2 Mil. The residual \$2.16 Mil is allocated to fund the operational and capital costs of the City's waste management program. This includes salaries for relevant staff, the operation of plant and equipment (a utility vehicle, truck and loader) and relevant capital works

It would be prudent to develop a budget for the next 10 years forecasting the infrastructure required to effectively manage the predicted waste volumes and types, population growth and environmental requirements. This task could be included as a line item in the City's long term financial planning.

3.6.1 JR Richards

The City has a contract with JRR for the period November 2013 to November 2023. The annual cost of the JRR contract is \$1.4 Mil.

Services provided by JRR include:

- weekly kerbside collections in the urban and village zones for 240L MSW MGBs containing solid waste;
- fortnightly kerbside collections in the urban and village zones for 240L MSW MGBs containing mixed dry recyclables;
- weekly servicing of street litter bins;
- weekly servicing of waste bins located in council managed parks and gardens; and
- weekly changeover of rural transfer station hooklift waste bins and MGBs containing mixed recyclables.

Kerbside collected MSW is disposed at the Lithgow SWF. Kerbside collected recyclables are transported by road on a weekly basis to a third party facility in Rydalmere, Sydney.

There is no kerbside green waste collection service.

As discussed in Section 3.5, part of the JRR contract is a waste education element. Funds to the value of \$25,000 pa are allocated.

3.6.2 Henry Plant Hire

HPH is contracted to construct, operate and manage the Lithgow Landfill seven days a

week. The scope of works includes controlling the weighbridge, waste placement, compaction and placement of daily, intermediate and final cover, construction of new waste cells and resource recovery activities.

Any funds generated by the sale of recyclables are retained by HPH.

The annual cost of the HPH contract is \$0.5 Mil.

3.6.3 Grants

a) Landfill Consolidation Grant

The City was successful in a NSW Environmental Trust Landfill Consolidation grant. This project involves environmental improvements to the Portland Garbage Depot and the Wallerawang Garbage Depot. The works involve upgrading the perimeter fences to chain mesh with two strands of barbed wire and the installation of CCTV. These works will help prevent unauthorised access, contain windblown litter, reduce illegal dumping, limit the contamination of stockpiles and will improve resource recovery.

b) Illegal Dumping Baseline Data

Baseline data on illegal dumping is required to enable the City to effectively manage the issue of illegal dumping. Successful grant funding from the EPA's Waste Less Recycle More Illegal Dumping Grants has provided Council with this opportunity.

Illegal dumping affects the natural environment, human health and costs Council and landholders a lot of money annually. Funds from this grant will be used to provide an accurate baseline, with an indication of the most commonly dumped waste stream, the demographic of who is responsible and will help prioritise and inform different preventative measures for the future.

For example, if most of the construction waste is asbestos, then the City will focus on ensuring businesses and residents in its own jurisdiction and neighbouring LGAs are clear on the impacts on the communities' health, the importance of safe and appropriate treatment of this waste and the correct disposal methods.

Using this information, the City intends to take a proactive approach, to identifying and recording illegal dumping in the LGA and the information will also support future illegal dumping grant funding.

c) Other grants

A number of grants are made available through the Waste Less Recycle More project. One of the smaller programs that has resulted from this grant is the Love Food Hate Waste project and a number of litter projects. These programs are reported on regularly.

3.7 REVIEW OF IMPLEMENTATION OF THE WASTE & RECYCLING STRATEGY 2010-2015

The Waste & Recycling Strategy 2010-2015 included a five year prioritised action plan for the City's implementation. This plan has been reviewed and the progress the City has made towards the implementation documented in Appendix C.

The key outstanding items are:

- Construction of Blackmans Flat Waste Management Facility and associated infrastructure. This has been delayed due to the revised Lithgow SWF landfill plan;
- Delays in the closure of the rural landfill sites; and
- Review of C&D management at the landfill sites.

A review of the opportunities for the collection of organics within the kerbside collection service and new transfer stations; and the associated proposal for an upgrade to a three bin kerbside collection scheme were flagged to be considered 2016+.

4 FUTURE WASTE MANAGEMENT OPTIONS & PLANS

4.1 UPGRADED LITHGOW SWF

Based on a review of incoming waste volumes and the possibility of an inflow of additional tonnes if the small rural landfills are closed, the upgraded Lithgow SWF's capacity is unlikely to stretch to 22 years as has been predicted in an earlier report to the City.

Future disposal tonnages will also depend on the efficacy of the proposed new transfer station mentioned below and the timing of its commencement of operations.

Clearly the first step is to implement the facility upgrades necessary to satisfy the regulatory performance requirements of the EPA.

4.2 PROPOSED NEW WASTE MANAGEMENT FACILITIES

4.2.1 Lithgow Waste Transfer Station

The operation of a modern waste transfer station at Lithgow is a highly desirable outcome as it will divert wastes away from disposal and thus increase the resource recovery performance.

Its availability will also enable waste collection strategies and services to be modified to increase resource recovery by implementing more source separation initiatives.

A waste transfer station to be located adjacent to the Lithgow SWF was proposed and designed in 2016. The construction cost is estimated to be \$4 Mil. The facility plans to provide a full range of resource recovery services.

Commencement of construction of the facility is dependent on the availability of funds provided by the City. Some funds have been

earmarked for expenditure in 2017/18, with construction to run over two years.

The City is exploring the possibility of securing funding from the NSW EPA to support the community recycling centre (CRC) component.

4.2.2 Blackmans Flat Waste Management Facility

The Blackmans Flat Waste Management Facility (near Portland, 17 km north of Lithgow) is on the site of the old Western Main Colliery at Blackmans Flat. The facility will only be concerned with the disposal of waste that is generated from within the boundaries of the Lithgow LGA. Development consent was secured in 2006 for this facility.

Blackmans Flat Waste Management Facility incorporates designs for a modern landfill and an integrated waste transfer/resource recovery facility.

The landfill is approved to receive 40,000 tonnes per year. The proposed landfill concept design capacity is approximately 744,000 m³, and would have a design life of 15 years.

The transfer station infrastructure will include a waste deposition area, green waste area, recyclables area and one two-way weighbridge. It is expected to receive 1000 tonnes per annum, with scope for future expansion if required. It would receive green waste, scrap metal, recyclables, C&D and C&I waste. The concept design includes in the facility three 30m³ residual waste bins which are anticipated to require pickup every 3 days on average. The layout would accommodate an additional two bins in future if required.

The consent for the construction has been activated. However, the project has been deferred because of the previously anticipated 22 years of available airspace remaining at the Lithgow SWF.

Given the presence of the rudimentary rural landfills and low key rural transfer stations in the vicinity, it would be prudent to rationalise the infrastructure situation by building the transfer station component of the planned Blackmans Flat Waste Management Facility, close some of the minimalist facilities and

upgrade others, given the travel distances involved.

The transfer station component would be considered as “Stage 1” of the Blackmans Flat Waste Management Facility. To proceed, this may require a modification of the existing development consent. Consultation with the RMS would be required to understand the traffic management requirements and if an intersection upgrade at the entrance to the facility would be required.

4.3 FACILITIES TO SERVICE RURAL AND REMOTE RATEPAYERS

Arguably one of the most challenging assignments is how to effectively manage the small volumes of waste generated by ratepayers located in rural and remote parts of the LGA, such that the approach is environmentally, socially and economically sustainable.

An approach could be to bring forward construction and operation of the transfer station component of the Blackmans Flat facility. This will require a modification of the Blackmans Flat development consent. The facility could have limited operating hours and be staffed at those times. Offloaded MSW could be regularly hauled to the Lithgow SWF by the City or a third party provider. Resource recovery materials could be stored here for longer periods and transported to other facilities by the City or a third party provider as required.

Simultaneously, the small sub-standard rural landfills and transfer stations nearby could be progressively closed.

Potential issues include obtaining rural landholder support for the plan, funding, an increase in fly tipping and the logistics for managing MSW transfers to the Lithgow SWF.

4.4 FINANCIAL ARRANGEMENTS

4.4.1 Contractual Arrangements

The state of contractual arrangements can greatly facilitate or conversely hinder the delivery of the desired waste management outcomes.

The two key contracts are arguably limiting the ability of The City to introduce innovative or different approaches to the management of waste.

For instance the current HPH contract for the operations and maintenance of the Lithgow SWF is tied to the timing of having the Blackmans Flat Waste Management Facility operational. That is, there is a clause in the contract that stipulates that the contract will be re-tendered when Blackmans Flat is opened. It would be prudent to re-negotiate the contract sooner rather than later to introduce more flexibility regarding management options for the City.

The contract with JRR similarly imposes limitations on the City regarding the transfer of five TS hook bins from the rural transfer stations.

This contract could also be revised to allow the closure of the rural transfer stations and haul waste to a modified Blackmans Flat transfer station.

4.4.2 Grants

The NSW Government regularly provides funds for the improvement of waste management facilities and strategies at the local government level. It would be prudent to investigate the possibility of securing OEH/EPA grants to help fund new capital works.

4.4.3 Lithgow City Council Resources

As part of the revision and realignment of the waste management strategy for the LGA moving forward it would be advantageous for

the City to review the human resourcing component its waste management services.

With the closure of the small rural landfills, the City could restructure the rural landfill officer position description to include being the supervisor and weigh bridge attendant at the Blackmans Flat facility and the hauling waste bins to and from the transfer stations.

4.5 OTHER OPPORTUNITES

4.5.1 Recyclables

With the advent of the new container deposit legislation it would be useful for the City to explore whether the legislative change provides a trigger mechanism for renegotiation of the JRR contract and improve resource recovery performance.

At present it is probably appropriate to maintain the recyclables component of the contract with JRR so the materials are hauled to Sydney. During the next phase it would be advisable to consider the feasibility of upgrading the MRF to better manage recyclables – perhaps on a regional basis under the auspices of NetWaste.

4.5.2 Green waste

a) Residential collection

The City could review arrangements with NetWaste regarding green waste management and explore the feasibility of introducing a household green waste collection service on a fortnightly basis.

b) Reuse at the Lithgow SWF

The City is looking to process green waste for use as material for inclusion in the final landfill cover matrix and is being duly addressed as part of the LEMP. It is understood Lithgow SWF requires 3,000 tonnes per annum green waste for the cell final cover material. This option is being negotiated with the EPA and would be in accordance with the Draft Environmental Guidelines: Solid Waste Landfills.

Allied with the paragraph above there is also a need to examine the financial and operational implications of the new EPA regulations requiring pasteurisation/processing of green waste and/or compost before it can be made available to the public.

The issue also needs to be flagged in the LEMP.

4.5.3 Other waste streams

Other small, special waste streams can continue to be managed as per current arrangements. In the event that the Lithgow Transfer Station is built then these wastes (eg waste oil, tyres, mattresses, E-waste, etc) can be more effectively collected, stored and managed. If a transfer station at Blackmans Flat is built then the same principles can apply.

4.5.4 Other measures

a) Development controls

As part of development approval for any development with a capex of over \$100K, it would be prudent to require pre-approved waste management plans. This would then be followed through by the City's officers to ensure compliance.

b) Waste data base

Having a robust, transparent waste database is crucial to being able to have confidence when framing future waste management strategies. It provides the baseline information necessary to underpin future plans.

It would be prudent therefore to update the Lithgow SWF weighbridge program to track MSW, C&I, C&D, VENM, green, all categories of dry recyclables, asbestos, special burials, security wastes, etc. The new transfer station at Lithgow should also have a robust waste tracking database.

c) Council briefing paper

As a corporate governance initiative, it may be prudent to prepare a briefing paper to full Council informing it of the current status of waste management in the LGA, documenting

the current and emerging issues and outlining future steps, beginning with a recommendation that the City prepare a detailed feasibility study to rationalise all waste management services and facilities in the LGA, with a priority to deliver an integrated facility network. The scope of the recommended work could include:

- determining the volumes of all main categories of waste (MSW, C&I, C&D, VENM, green, all the categories of dry recyclables, asbestos, special wastes, etc) both now and out 20 years;
- re-examining the remaining life of Lithgow Landfill given increased waste volumes;
- examining current and predicted state government policy;
- documenting the status of current waste management facilities and what is proposed;
- examining how resource recovery could be enhanced in a financially viable way;
- examining costs compared to the funding base;
- examining mechanisms to fund facility planning, construction and operation ;
- suggesting locations of facilities; and
- documenting a construction and funding schedule.

5 RECOMMENDATIONS

5.1 WASTE INFRASTRUCTURE FEASIBILITY STUDY / MASTER PLAN

5.1.1 Background and Imperative

It is recommended that the City undertake a detailed feasibility study/master plan to fully investigate all existing waste management services and facilities in the LGA. Being mindful of the wastes generated, this investigation would have as a priority moving forward deliver delivering an integrated facility network that is efficient and effective and provides a quality service to residents, ratepayers and businesses.

Of critical importance is determining the funding needs for the necessary infrastructure and service provisions. The City will need to consider its funding options – both short and medium term - and plan budgets accordingly.

At present there are a number of uncertainties regarding actual waste quantities and types and the schedule for opening and closing various waste management facilities. These matters require detailed examination to enable effective planning into the future.

Subjects of interest include:

a) Lithgow SWF:

Based on the current incoming waste volumes and the expected tonnage increase if the small rural landfills are closed, the Lithgow SWF's capacity is unlikely to stretch the 22 years that was recently mooted in another study. The 22 year lifespan was calculated on the basis of approximately 25,000 tonnes per annum being received. However, the Lithgow SWF is currently receiving approximately 45,000 tonnes per annum and across the whole LGA there is approximately 50,000 tonnes per annum being received at all landfill sites, exclusive of VENM.

Future disposal tonnages will also depend on the efficacy of measures to reduce waste volumes being landfilled, the timing of operations of the

new Lithgow Transfer Station (yet to be built) and a possible, proposed new transfer station at Blackmans Flat and the timing of its commencement of operations.

The robustness of the assumptions on which the remaining lifespan of the Lithgow SWF is based and how this will change over time needs to be better understood. The robustness of the assumptions on which the remaining lifespan of the facility is based and how this will change over time needs to be better understood.

b) Proposed Blackmans Flat Waste Management Facility

This site sits at the confluence of two waterways and within the Sydney drinking water catchment. As such, it has some onerous requirements to meet the WaterNSW (former Sydney Catchment Authority) approval conditions regarding leachate management.

There are also some landholding opportunities that could be explored with Energy Australia and/or Centennial Coal in relation to resiting the facility. It needs to be determined whether this is feasible and whether there a more suitable site nearby and if so, the implications for the facility's planning approval. These matters should be resolved prior to any works commencing on the current site.

The site is also only approved to receive up to 40,000 tonnes per year, which is less than the 45,000 tonnes per year currently received at the Lithgow SWF, excluding VENM, and 50,000 tonnes per year excluding VENM inclusive of the rural landfill receipts.

If the Stage 1 works were to proceed at the current proposed site, the issue of whether a modification is required to the existing consent needs to be addressed along with determining what the scope and extent of the works would be, including the intersection upgrades, the costs and the timing of providing the infrastructure.

c) Rural Landfill Sites

The management of the rural landfill sites ties into the construction or otherwise of Stage 1 of the Blackmans Flat Waste Management Facility. The issues centre predominantly on

which of the existing rural landfills would transition to waste transfer stations and which would close with the residents then being serviced by Stage 1 of the Blackmans Flat Waste Management Facility. Those primarily in question are:

- Cullen Bullen;
- Wallerawang; and
- Portland.

Given the additional life identified in the 2017 filling plans and life analysis for the Portland and Wallerawang landfills (Amaral, 2017a, 2017b and 2017c) the City's can defer construction of any works at the Blackmans Flat site until these landfills have reached the end of their operational life. This will ensure the rural landfills are rehabilitated progressively, providing financial saving to the community.

Landfilling operation at Cullen Bullen will cease by 2019 when a final landform can be achieved. The City will undertake further consultation with the community of Cullen Bullen to determine if a waste transfer station will be constructed or if residence will take their waste to the nearby Portland waste depot. ..

There is also a right-of-way at the existing landfill at Wallerawang. If it is determined that a waste transfer station should replace the existing landfill, then the most suitable location for the facility needs to be determined.

5.1.2 Scope

The scope of work for an infrastructure feasibility study / master plan would include:

- detailed quantification and classification of waste types and volumes, both now and out 20-30 years;
- current and predicted state government policies relating to waste management , waste minimisation and resource recovery;
- waste facilities – current and proposed;
- community expectations;
- the applicability of regional approaches to waste management;

- predicted future costs and revenue compared to the current and predicted funding base;
- funding mechanisms – local and state government;
- locations of facilities;
- contractual arrangements for facilities and service management so the City can optimise flexibility and efficiency; and
- construction and funding schedule.

This feasibility study/master plan is considered necessary to provide the detail and granularity necessary to enable this Waste Strategy Review report to be finalised.

5.2 INFRASTRUCTURE DEVELOPMENT

Based on this initial review there are a number of infrastructure options which can be tentatively considered as outlined below.

These need to be confirmed and made more detailed and robust via an infrastructure feasibility study/master plan.

- Prioritise upgrade works to modernise the Lithgow SWF and future operations plans. Progress requires close liaison and co-operation with the NSW EPA.
- Prioritise construction and operation of Lithgow Waste Transfer Station.
- Bring forward construction and operation of the transfer station component of the Blackmans Flat Waste Management Facility (to be considered as 'Stage 1'). This will provide a modern waste management facility in a central location for rural residents to replace a number of the unattended rural landfill sites and small, unattended transfer facilities. Resource recovery materials from rural areas would be deposited here, with MSW wastes required to be hauled to the Lithgow SWF. A modification of the existing development consent is likely to be required for the project to be staged in this manner.
- Progressively close and remediate the small rural landfills as scheduled.
- Review and renegotiate the two waste management contracts (JRR and HPH) to

improve cost effectiveness and to rationalise operations so consistent with the new waste management strategy.

More specifically:

- HPH contract: allow greater flexibility independent of whether Blackmans Flat is operational or not. This may require some legal advise;
- JRR contract: allow greater flexibility regarding all facets of the contract including kerbside waste and recyclables collection and hook bin management at the rural transfer stations with the potential for the City to take over the role of bin servicing.

- Virgin Excavated Natural Material (VENM)
- Asbestos
- Special Waste eg clinical waste
- Special Burials eg loads comprising of specification goods and products
- Recycling Metal
- Recycling E-waste
- Recycling Cardboard/Paper
- Recycling Glass

The data base should also be updated to be able to track where asbestos and any other special wastes are buried.

5.3 RECYCLABLES

Review the container deposit legislation to determine if the City can use it as the trigger to revise the JRR contract in light of recommended changes above. Also use the review to identify any legislative responsibilities imposed on the City.

For the present time maintain the recyclables contractual arrangements with JRR with the materials hauled to Sydney. However in the next phase of infrastructure planning it is recommended the City consider the feasibility of building a MRF to better manage recyclables – perhaps on a regional basis under the auspices of Netwaste.

5.4 WASTE DATA TRACKING

Modify the Lithgow SWF weighbridge data base so it is adopting best practice standards regarding the various waste streams to be accurately recorded and weighed including:

- Municipal Solid Waste (MSW) – with subcategories
- Commercial & Industrial (C&I) – with subcategories
- Construction & Demolition (C&D)- with subcategories
- Green Waste
- Excavated Natural Material (ENM)

6 REFERENCES

Amaral, 2016. Conceptual Design Drawings, Lithgow Landfill

Amaral 2017a. Portland filling plan

Amaral 2017b Portland and Wallerawang Landfills Life Expectancy Analysis

Amaral 2017c Wallerawang Filling Plan

Lithgow City Council, 2016. Waste & Recycling volumes for Lithgow LGA 2015-16

Molino Stewart, 2010. Waste and Recycling Strategy 2011-2016

NetWaste, 2016.
<http://www.netwaste.org.au/about-us/>
Accessed 1.08.2016.

APPENDIX A – KERBSIDE COLLECTION ROUTES

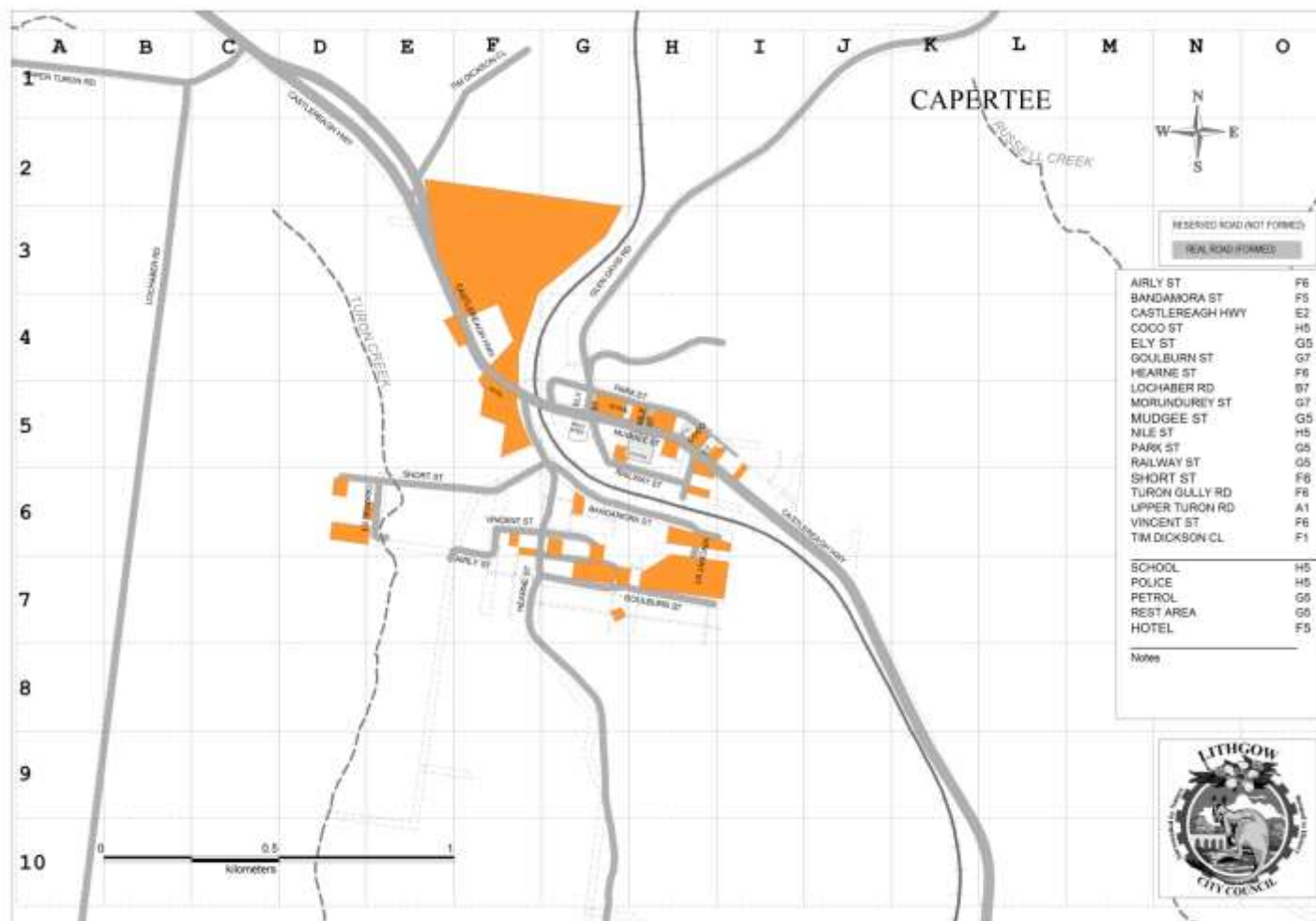


Figure 1 Capertee Kerbside Collection Route



Figure 2 Clarence Kerbside Collection Route

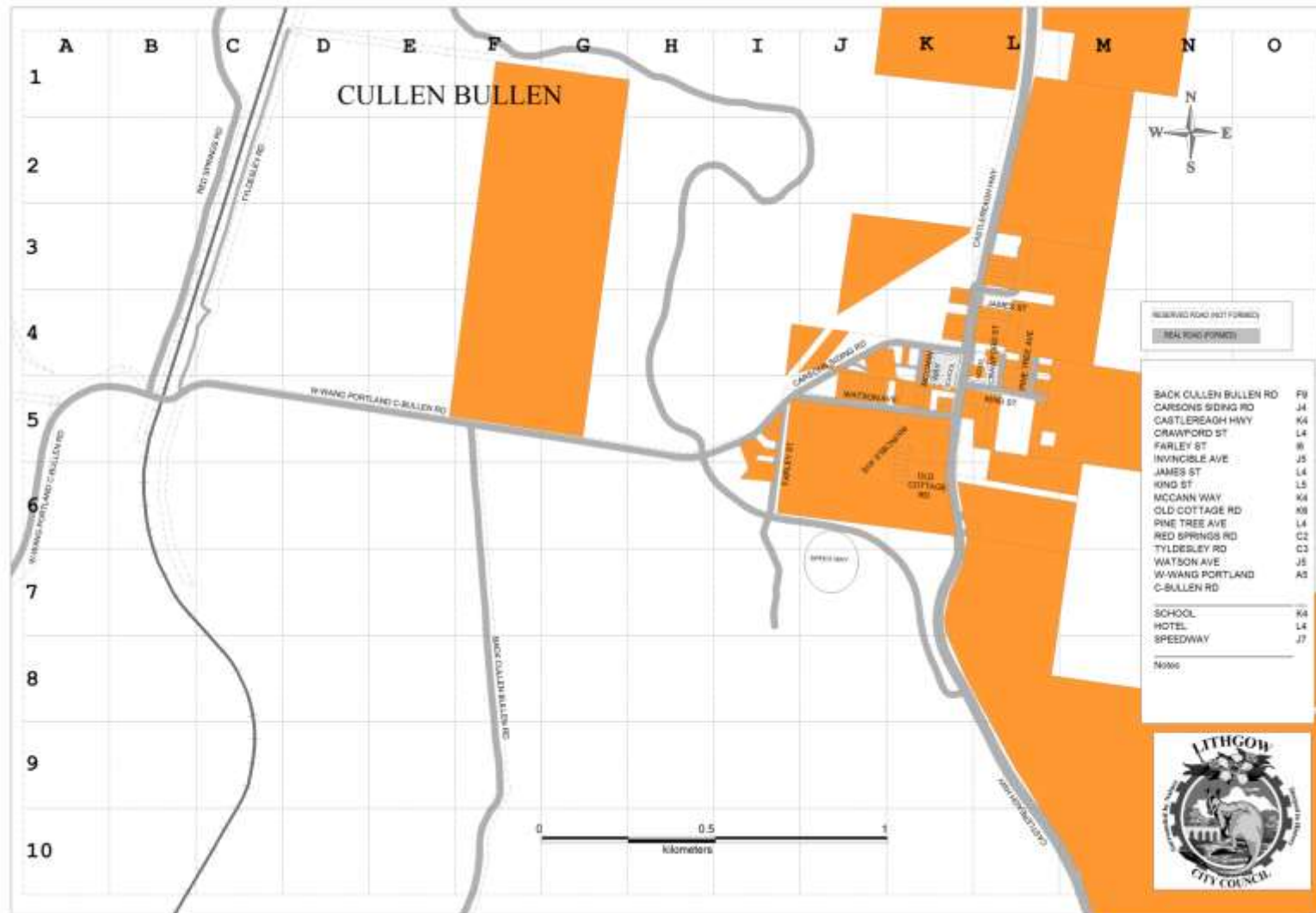


Figure 3 Cullen Bullen Kerbside Collection Route

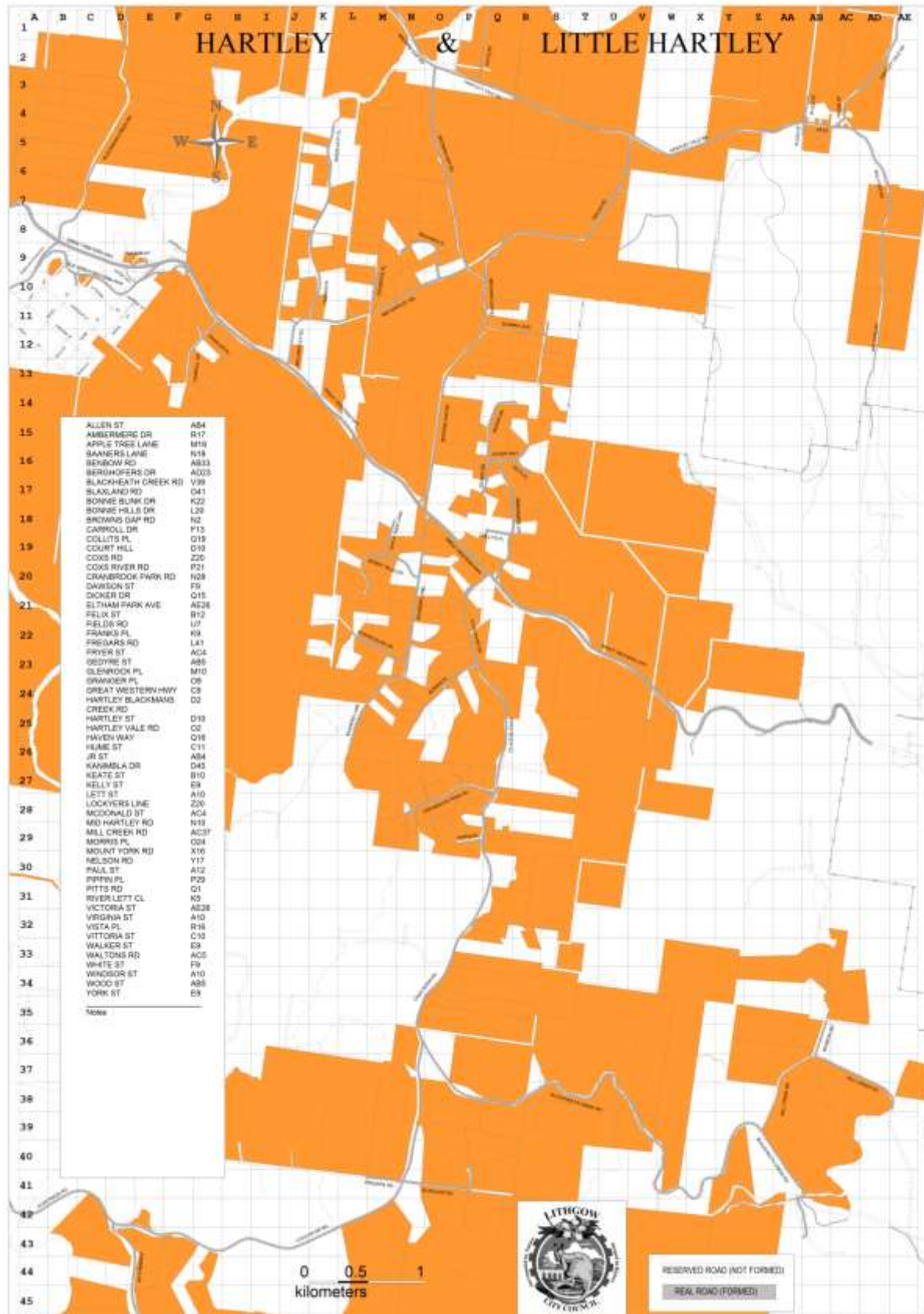


Figure 4 Hartley & Little Hartley Kerbside Collection Route

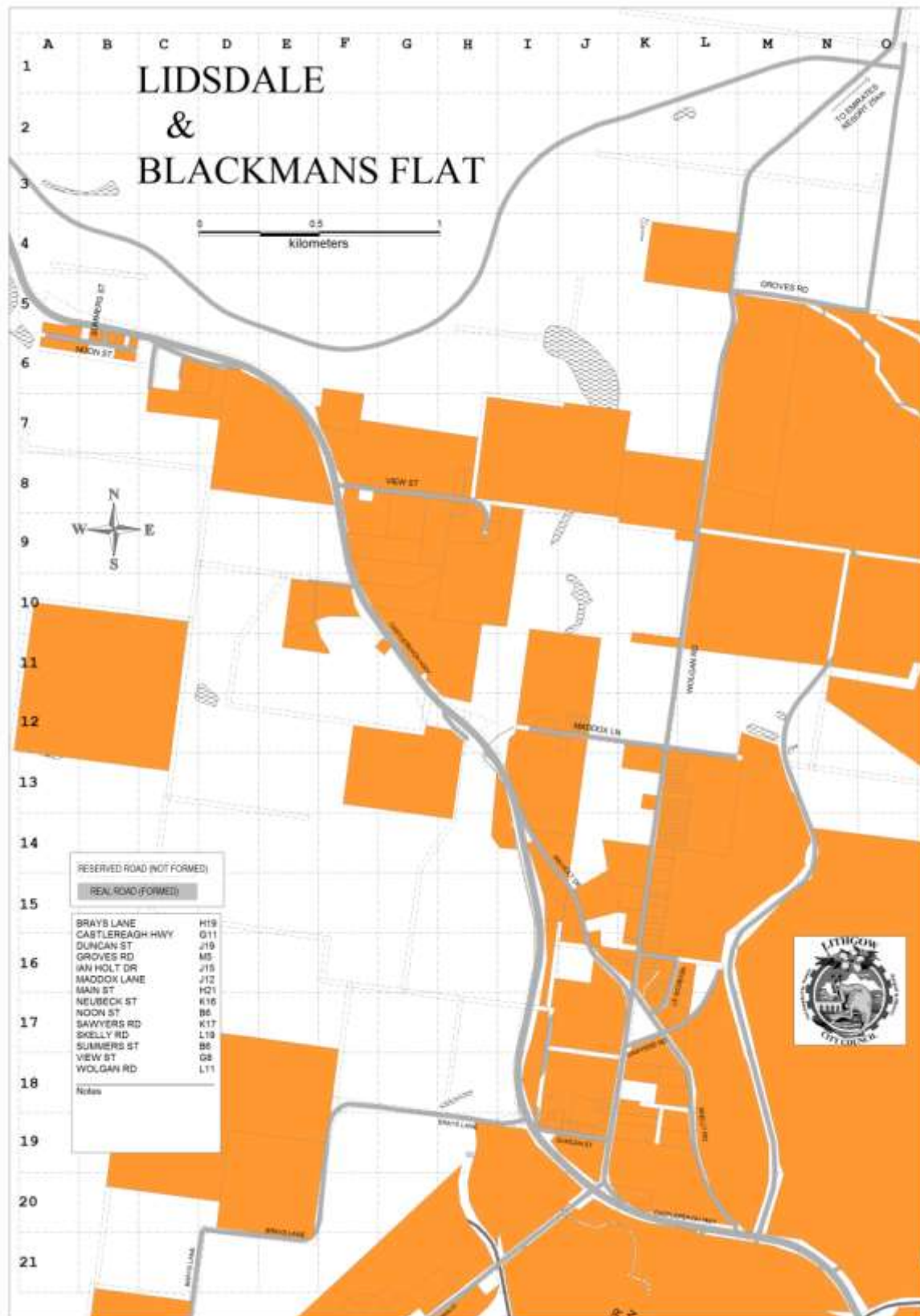


Figure 5 Lidsdale & Blackmans Flat Kerbside Collection Route

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GARBAGE ROUTES NORTH

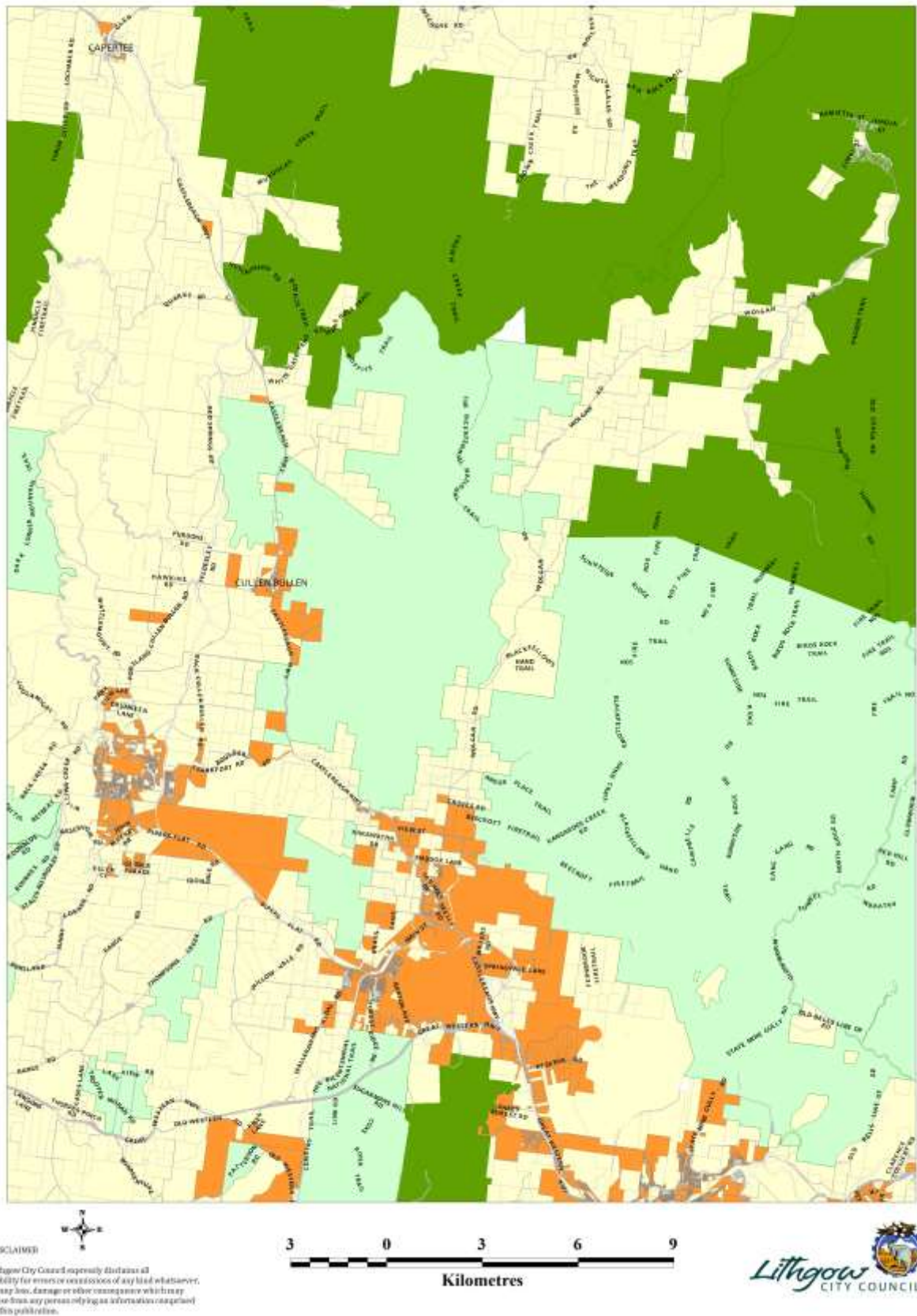


Figure 7 North Lithgow Collection Route(overview)

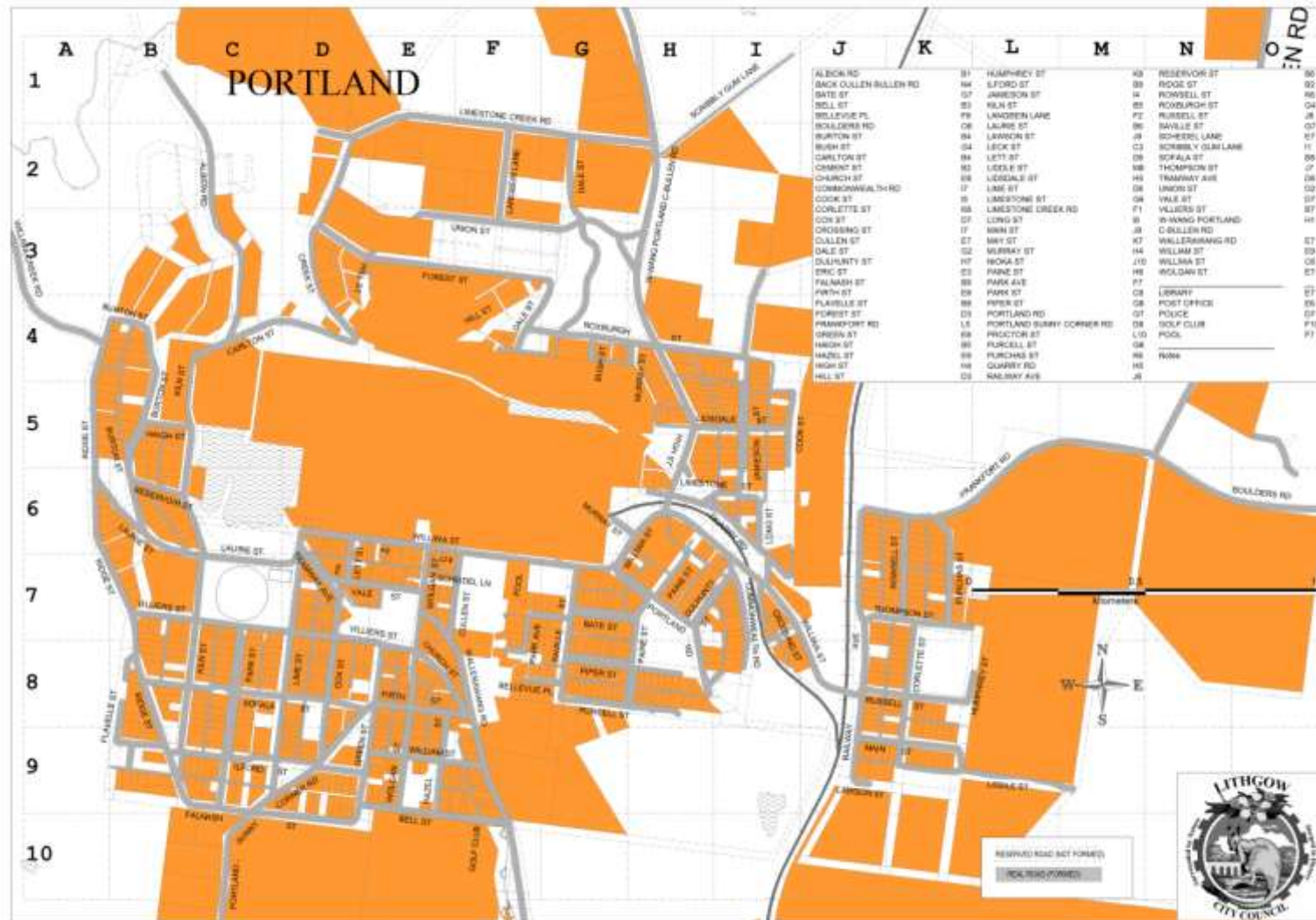


Figure 8 Portland Collection Route

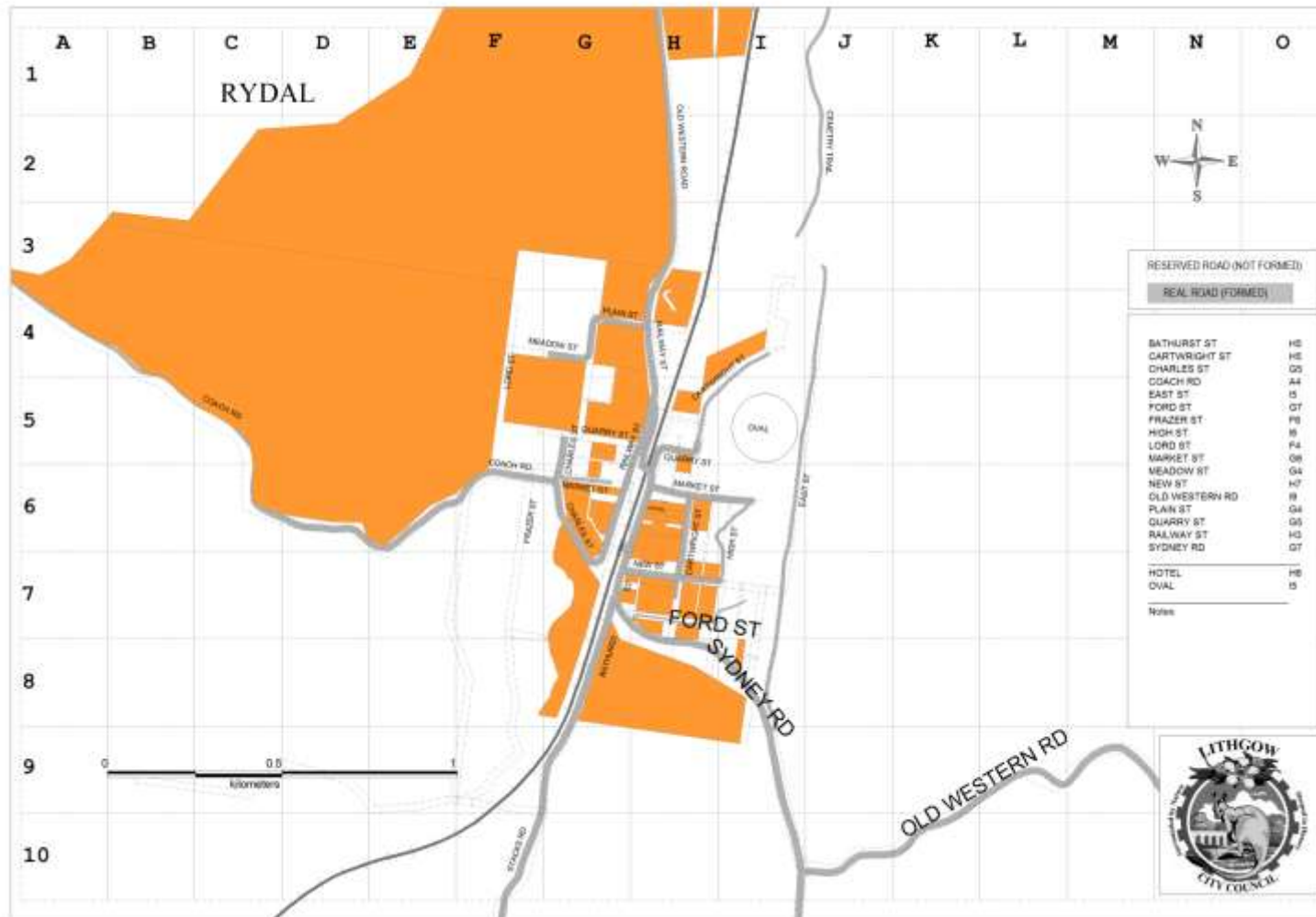


Figure 9 Rydal Collection Route

GARBAGE ROUTES SOUTH

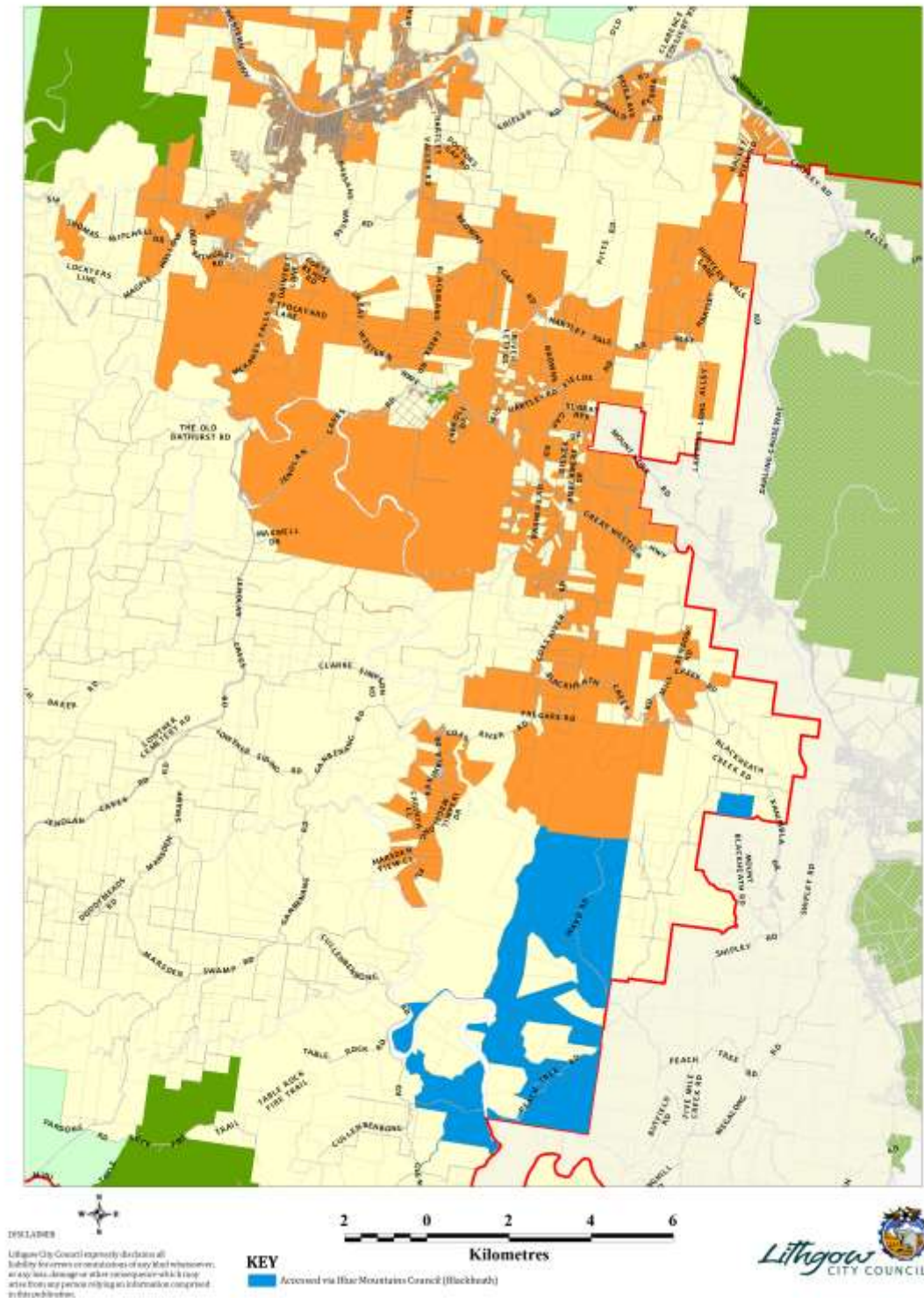


Figure 10 South Collection Route

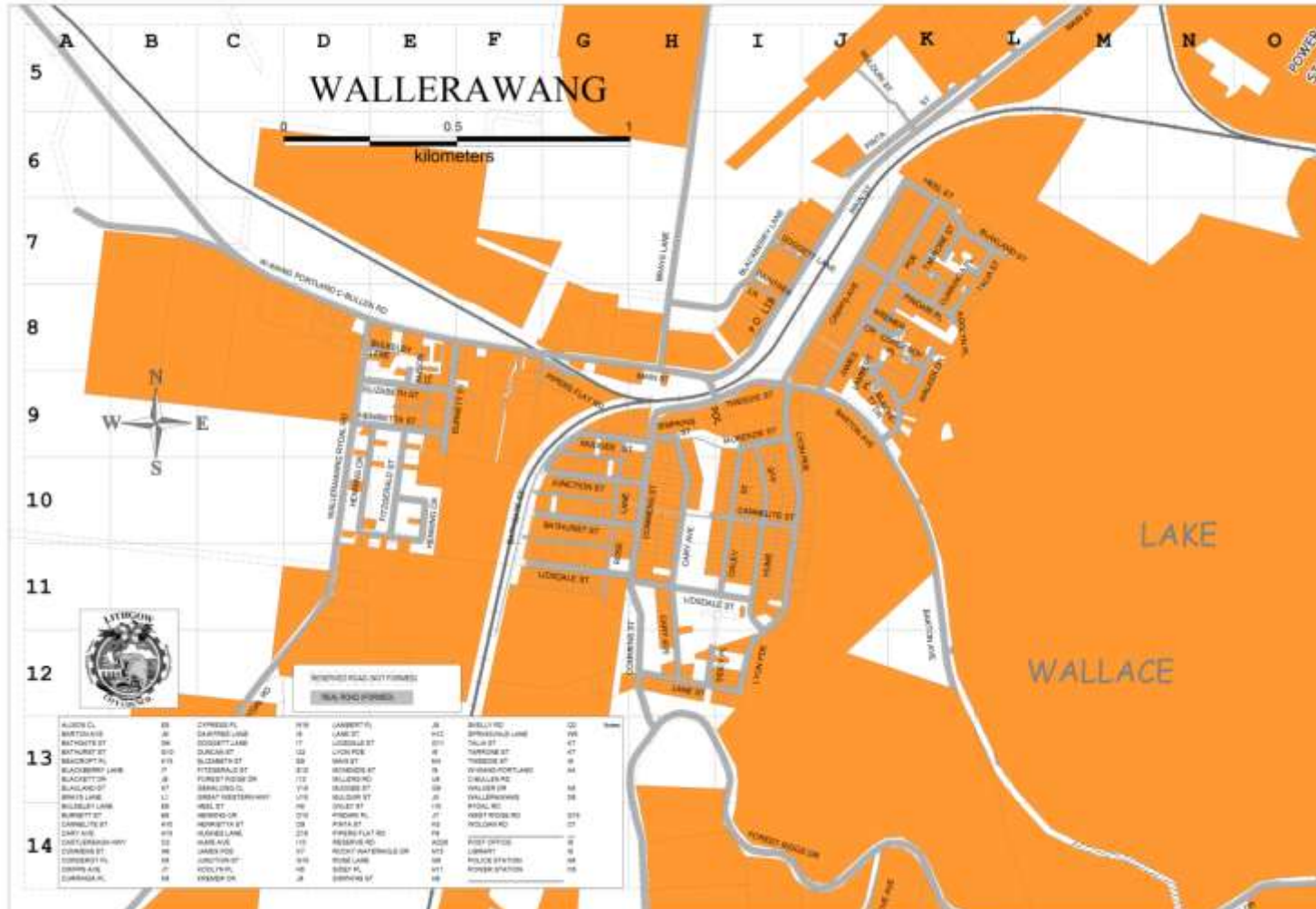


Figure 11 Wallerawang Collection Route

APPENDIX B – REGULATORY FRAMEWORK

REGULATORY FRAMEWORK

Waste infrastructure planning and management have long been recognised as significant issues at both the State and Local Government levels in NSW, evidenced by the number of related statutes, which include the:

- Local Government Act 1993;
- Environmental Planning and Assessment Act 1979;
- Environmental Planning and Assessment Regulation 2000;
- Protection of the Environment Administration Act 1991;
- Protection of the Environment Operations Act 1997;
- Protection of the Environment Operations (Waste) Regulation 1996;
- Waste Avoidance and Resource Recovery Act 2001;
- Contaminated Land Management Act 1997;
- Public Sector Employment and Management (Environment and Conservation) Order 2003; and
- State Environmental Planning Policy (Infrastructure) 2007.

Waste management legislation is complex, and detailed examination of regulations surrounding the provision of waste-related services and infrastructure development is required to ensure statutory compliance. In addition to statutes, the Environment Protection Authority of NSW (NSW EPA) has produced *Environmental Guidelines for Solid Waste Landfills* and *Environmental Guidelines for the Assessment, Classification and Management of Liquid and Non-Liquid Wastes* to assist operators in meeting environmental obligations.

COMMONWEALTH LEGISLATION

National Greenhouse and Energy Reporting Act 2007 (NGER Act)

The National Greenhouse and Energy Reporting Act 2007 (NGER Act) established a single national framework for reporting and disseminating company information about greenhouse gas emissions, energy production, energy consumption and other information.

A controlling corporation is required to report on all facilities under the operational control of members of its corporate group if it meets a corporate threshold. This includes facilities that meet a facility threshold and those that do not. The corporate level threshold is 50kt CO₂-e of greenhouse gas emissions or 200 TJ of energy for the first reporting year. Corporations that meet an NGER threshold must report their:

- greenhouse gas emissions
- energy production
- energy consumption, and
- other information specified under NGER legislation.

Council has sought professional assistance in order to determine its potential liability under the NGER Act and can advise that the total emissions of its operations and facilities will be under the 50,000 tonnes of CO₂-e annual threshold. The City should review annual emissions and compliance annually.

STATE LEGISLATION

An overview of NSW-based legislation, regulation and policy relevant to waste management planning for Lithgow Council is presented below.

Local Government Act 1993

Under Chapter 6 of the *Local Government Act 1993*, Councils' non-regulatory functions include the provision, management or operation of "waste removal, treatment and disposal services and facilities". S. 496 provides for the application of a levy to domestic waste management services. Significantly, s.504 of the Act prescribes not only how the cost of services is to be recovered, but also broadly, the level of these charges. This may limit a Council's ability to pursue more expensive waste management options, which might result in a significant increase in their annual waste charges. S. 510 provides a maximum annual charge for domestic waste management services.

Subsection (1) states that a Council must not apply income from an ordinary rate towards the cost of providing domestic waste management's services; however, subsection (1A) allows income from an ordinary rate to be lent (by way of internal loan) for use by Council in meeting the cost of providing domestic waste management services. Other sections of the Act relate to Councils' authority to approve (or otherwise) management of waste (s.68, part C), and a requirement to include waste-related issues within the Environmental section of Annual Reports (s.428 (2) (c) (v)).

Environmental Planning and Assessment Act 1979

Section 91 of the *Environmental Planning and Assessment Act 1979* links development consent for waste facilities above nominated threshold levels, being "integrated developments", to approvals prescribed within the *Protection of the Environment Operations Act 1997*.

Specifically, environment protection licences must be sought to authorise the carrying out of scheduled activities at any premises described as a waste facility that receives in excess of the prescribed quantity of waste annually.

Environmental Planning and Assessment Regulation 2000

The *Environmental Planning and Assessment Regulation 2000* sets forth the steps that are required to gain development consent for the establishment or alteration of new and existing developments or activities. This includes the lodgement of Development Applications (DAs), accompanying information requirements and associated charges. Notably, Part 1, Schedule 3 (Item 32) of this regulation sets threshold criteria for designated developments. Here, waste management facilities or works are taken to be those that "store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste". More specifically, waste management facilities or works:

1(a) that dispose (by landfilling, incinerating, storing, placing or other means) of solid or liquid waste:

- (i) that includes any substance classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or
- (ii) that comprises more than 100,000 tonnes of "clean fill" (such as soil, sand, gravel, bricks or other excavated or hard material) in a manner that, in the opinion of the consent authority, is likely to cause significant impacts on drainage or flooding, or
- (iii) that comprises more than 1,000 tonnes per year of sludge or effluent, or
- (iv) that comprises more than 200 tonnes per year of other waste material, or

1(b) that sort, consolidate or temporarily store waste at transfer stations or materials recycling facilities for transfer to another site for final disposal, permanent storage, reprocessing, recycling, use or reuse and:

- (v) that handle substances classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste, or*
- (vi) that have an intended handling capacity of more than 10,000 tonnes per year of waste containing food or livestock, agricultural or food processing industries waste or similar substances, or*
- (vii) that have an intended handling capacity of more than 30,000 tonnes per year of waste such as glass, plastic, paper, wood, metal, rubber or building demolition material, or*

1(c) that purify, recover, reprocess or process more than 5,000 tonnes per year of solid or liquid organic materials, or

1(d) that are located:

- (i) in or within 100 metres of a natural water body, wetland, coastal dune field or environmentally sensitive area, or*
- (ii) in an area of high water table, highly permeable soils, acid sulphate, sodic or saline soils, or*
- (iii) within a drinking water catchment, or*
- (iv) within a catchment of an estuary where the entrance to the sea is intermittently open, or*
- (v) on a floodplain, or*
- (vi) within 500 metres of a residential zone or 250 metres of a dwelling not associated with the development and, in the opinion of the consent authority, having regard to topography and local meteorological conditions, are likely to significantly affect the amenity of the neighbourhood by reason of noise, visual impacts, air pollution (including odour, smoke, fumes or dust), vermin or traffic.*

As a result, Part 1 of Schedule 3 of this regulation requires that for facilities exceeding these threshold levels, an Environmental Impact Statement (EIS) needs to be prepared to accompany a DA to establish a new or alter an existing development. Within the EIS, consideration must be given to alternatives to carrying out the development or activity, environmental effects, measures to mitigate adverse effects and justification for the development. The effect of this regulation is that it introduces a rigorous assessment process for the establishment of new (designated) waste facilities or the alteration of existing waste operations. Thus extensive study and planning must be carried out in order to gain development consent for proposed facilities. This often introduces a significant cost and time factors into establishing major facilities. For those developments which are not deemed to be designated developments i.e. those not exceeding threshold requirements, Part 1 subclause (1)(c) of this Regulation requires that development applications must be accompanied by a Statement of Environmental Effects (SEE).

Protection of the Environment Administration Act 1991

The objectives of the *Protection of the Environment Administration Act 1991* are:

- a) to constitute the Environment Protection Authority (EPA);
- b) to provide integrated administration for environment protection; and
- c) to require the Authority to perform particular tasks in relation to the quality of the environment, environmental audit and reports on the state of the environment.

Within this Part 3 of this Act, the objectives of the EPA are stated as being:

6 (1) (a) to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development; and

6. (1) (b) to reduce the risks to human health and prevent the degradation of the environment.

Notably, Part 4 of the Act outlines the responsibilities and powers of the EPA including its responsibility for reporting on the state of the environment every 3 years. Of particular relevance to Councils is Part 4 Section 12 in which the EPA is assigned the power of direction to any public authority. Specifically, the EPA may from time to time:

12. (1) (a) direct any public authority to do anything within the powers of the public authority which will, in the opinion of the Authority, contribute to environment protection; or

12. (1) (b) direct any public authority to cease doing anything which, in the opinion of the Authority, adversely affects environment protection.

However, it should be noted that the power of direction is subject to a consultation process as laid out in the remainder of Section 12.

Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* is a key legislative instrument in the overall management of waste and its effects on the environment. This is evident from its direct reference to the *Waste Avoidance and Resource Recovery Act 2001* (s.3 (g)). This Act forms a key instrument in the permitting and operating of waste facilities, specifying licences, operating documentation, operating standards, and remedies for waste-related activities, which may include remediation works. The Act prescribes the licensing requirements and environmental standards to which facilities conducting scheduled activities should operate. Specifically, Schedule 1 of this Act lists solid waste landfills receiving over 5,000 tonnes per year of solid waste, or solid waste and inert waste, as EPA-licensed activities. The meaning of solid wastes is further defined in Schedule 1, Part 4. Additionally, composting facilities must be licensed where they have more than 2,000 tonnes of organics on site at one time or where they have more than 5,000 tonnes of non-putrescible organics or more than 200 tonnes of putrescible organics (outside of the regulated area).

A notable feature of this Act is the system of penalties ranging from Tier 1 offences for wilful or negligent (criminal) acts of environmental damage, through to Tier 3 offences against the Act or regulations referred to within the Act. Tier 2 and 3 offences are strict liability offences, often resulting in a monetary fine. This system of penalties reflects the seriousness with which the NSW EPA views acts of environmental pollution. Coupled with broad descriptions of breaches e.g. a person must not pollute, cause or permit waters to be polluted (s.120), the Act imposes a heavy responsibility on individuals and corporations to ensure that the environment is not harmed as a consequence of its activities.

In terms of ensuring adherence to relevant environmental standards and licence requirements, Chapter 7 of this Act details the investigative powers of the NSW Environment Protection Authority and its officers. Here, an authorised officer may enter any premises at where the officer reasonably suspects that pollution has been, is being or is likely to be caused. In addition, evidentiary search powers are assigned to authorised officers in carrying out their investigations.

The POEO Act establishes the waste and environment levy (the levy) which is payable by scheduled waste facilities (those requiring a licence) in the regulated area (see below) and state wide for intractable liquid waste. The levy applies to waste disposed to landfill or intractable liquid waste facilities. The solid waste levy applies in the regulated area of NSW which is made up of the Sydney Metropolitan Area, the Illawarra and Hunter regions and, as of July 2009, the central and north coast local government areas to the Queensland border as well as the Blue Mountains, Wingecarribee and

Wollondilly local government areas. A flat levy is charged on solid waste regardless of the type of waste, but the rate varies across the three geographical regions.

It is to be noted that payment of the levy does occur in the Lithgow Local Government Area should waste be transported from Sydney or the other regulated areas for disposal at a licensed landfill. Section 88 of the Act requires payment of contributions by the license holder of the waste facility. Two of Lithgow City Council's landfills are licensed. The payment of the levy outside is to deter the disposal of waste outside of the regulated areas in an attempt to avoid the landfill disposal costs.

In the Metropolitan Levy Area (MLA), the levy commenced at \$0.51 per tonne in 1971 and is currently \$135.70 per tonne. In the Regional Levy Area (RLA) the levy is currently \$78.20 per tonne. Lithgow is not within either the MLA or RLA but waste transported from those areas still attracts the levy.

The levy works by increasing the cost of waste disposal, thereby providing a strong economic incentive to reduce waste generation and promote resource recovery. The levy is designed to discourage landfill disposal and drive resource recovery investment. As the levy increases, it encourages waste generators to review their practices and makes recycling options more financially viable in comparison to landfill.

Protection of the Environment Operations (Waste) Regulation 1996

The *Protection of the Environment Operations (Waste) Regulation 1996* establishes requirements relating to non-licensed waste facilities, waste activities and transporters. These requirements relate primarily to operation and reporting. The regulation also details financial contributions by occupiers of scheduled waste facilities and monitoring requirements.

Waste Avoidance and Resource Recovery Act 2001

The *Waste Avoidance and Resource Recovery Act 2001* sets forth the State's overall objectives in the responsible and sustainable management of waste. It is notable that the waste hierarchy has been enshrined within the objects of the Act i.e.

3(b) (i) *Avoidance of unnecessary resource consumption;*

3(b) (ii) *Resource recovery (including reuse, reprocessing, recycling and energy recovery); and*

3(b) (iii) *Disposal.*

The hierarchy discourages consumption and encourages resource recovery in its many forms, thereby placing an increased emphasis on alternative technologies for recovering resources and treating waste.

Contaminated Land Management Act 1997

The *Contaminated Land Management Act 1997* establishes a process of investigating and (where appropriate) remediating land in areas where contamination presents a significant risk of harm to human health or some other aspect of the environment. Most significantly, it sets out accountabilities for managing contamination if a significant risk of harm is identified, which includes a hierarchy of liability for land contamination.

This is evidenced by s.9 (3) (d) (i) which states that "those who generate pollution and waste should bear the cost of containment, avoidance or abatement". Hence there is a clear link with managing waste in a responsible and sustainable manner. Here, it is understood that the NSW EPA has served remediation orders on Local Councils held to be responsible for the contamination of land which is

deemed to present a significant risk of harm. It is further understood that one such notice specifically related to a former waste disposal facility which was previously operated by a Sydney metropolitan Council and requires it to remediate the site at Council's cost. As a result, a clear link has been established between contaminated land which presents significant risk of harm and the past and present activities of local councils. Furthermore, given the increasingly stringent environmental standards for "polluting" activities, the issuing of such a notice has the ability to impose significant financial burden upon a local Government and its constituents.

On 10 December 2003, this Act was amended by the assent of the *Contaminated Land Management Amendment Act 2003*. Whilst this Act deals mainly with the accreditation of site auditors, it also includes an amendment which enables the recovery in court, of a portion of investigation costs from those who have had partial responsibility for the contamination of land.

On 1 January 2015, this Act was amended by the assent of the *Protection of the Environment Legislation Amendment Act 2014*. This Act increases the maximum penalties for certain offences and enables the EPA to require a person to whom a management order is directed to provide a financial assurance to secure or guarantee funding for or towards the carrying out of an action required under the order.

GUIDELINES

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) assists the NSW Government, local councils and the communities they support by simplifying the process for providing infrastructure like schools, hospitals, roads, railways, emergency services, water supply, electricity delivery and waste management facilities. The ISEPP includes specific planning provisions and development controls for 25 types of infrastructure works or facilities. It plays a key part delivering the NSW Government's infrastructure works.

Division 23 of the ISEPP outlines the conditions under which a waste or resource management facility may be approved. This includes waste management facilities, waste transfer stations and recycling centres. Such developments may be approved if the consent authority considers that there is a suitable level of resource recovery, that the design and operation comply with best practice, that the design maximises landfill gas capture, that the land is suitable for the purpose, that there are no land conflicts, and that transport links to the landfill are optimised to reduce the environmental and social impacts associated with transporting waste to the landfill.

Environmental Guidelines: Solid Waste Landfills

The purpose of the Environmental Guidelines: Solid Waste Landfills (Guidelines) is to "launch" a consistent and environmentally responsible approach to managing landfills across NSW. The NSW Office of Environment and Heritage (EPA) holds the view that such an approach is vital to instilling community confidence in landfilling activities and avoiding extremely costly land remediation programs. As a result, rather than prescribing actions or designing specifications and standards, OEH (EPA) has selected a performance-based criteria approach for its Guidelines to promote and achieve the best environmental outcomes for the effective treatment and disposal of waste.

The Guidelines assume five principal environmental management techniques for landfills, which an owner / occupier must consider in order to achieve the best environmental outcome.

1. Site selection;
2. Design and construction;

3. Monitoring;
4. Site operations management; and
5. Remediation and post closure management.

The Guidelines focus on environmental management during the planning process and actual life of a landfill, by providing an outline of issues and goals that need to be managed. These include a system for regulating landfills and some current techniques for managing these issues. From this, current and future occupiers of landfills are required to acknowledge the environmental issues they are expected to manage, recognise goals and performance levels expected of them, and consider their strategic approach to landfilling throughout the life cycle of a landfill facility.

Draft Environmental Guidelines: Solid Waste Landfills

These guidelines provide guidance for the environmental management of landfills in NSW by specifying a series of best practice measures called 'Minimum Standards'. They involve a mix of design and construction techniques, effective site operations, monitoring and reporting protocols, and post-closure management.

One of the standards in this guideline, which has changed from earlier practice is that daily cover material should be virgin excavated natural material in the form of soil. A minimum cover depth of 150 mm is required. At all times, at least 2 weeks' cover material should be available at the landfill. If this material cannot be won on-site, a stockpile of daily cover material should be maintained adjacent to the tip face.

The guidelines also contain directions relating to the sealing of a landfill with an evapotranspiration cap (or phytocap). Such caps must be prepared in accordance with recognised guidelines, and require accurate calculations and modelling to ensure that factors such as rainfall percolation, soil, vegetation and climate are properly accounted for. All such proposals must be first considered by the EPA. There are also specific and detailed requirements relating to soil and vegetation selection, and monitoring requirements.

Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Waste

The purpose of these environmental guidelines is to provide general assistance to parties generating, storing, transporting, treating, processing, reprocessing or disposing of waste to fulfil their licensing requirements. As such, the document draws together common issues relating to liquid and non-liquid wastes. The guideline outlines:

- the obligations of those required to hold licences as well the general environmental obligations of those who do not need a licence,
- the classification and assessment process for both liquid and non-liquid wastes
- the rules set out within the Waste Regulation for the management of liquid and non-liquid wastes once they have been classified, as well as discussing good management practices and the constraints on sending particular wastes to certain landfill facilities,
- common issues arising from the classification and management of waste, drawing out some implicit and explicit linkages between various aspects of waste regulation and discusses these in relation other aspects of environmental regulation. These take the form of general answers to common questions including:
 - the handling of chemical waste;

- the extent to which a generator is responsible for the assessment and classification of waste;
- sampling and testing of waste;
- relevant documents;
- acid sulphate soils in landfills.

OTHER RELEVANT DOCUMENTS

National Waste Policy

The National Waste Policy builds on the 1992 National Strategy for Ecologically Sustainable Development commitments to improve the efficiency with which resources are used, reduce the impact on the environment of waste disposal, and improve the management of hazardous wastes, avoiding their generation and addressing clean-up issues. It also seeks to enhance, build on, or complement, existing policy and actions at all levels of government.

To achieve these outcomes, the policy sets six key directions and identifies 16 priority strategies to guide, direct and complement the actions of individual jurisdictions. The strategies are designed to:

- provide a coherent, comprehensive national framework for waste management, resource recovery and the avoidance of waste over the next decade
- enable Australia to meet its international obligations in regard to the management of hazardous wastes and substances and persistent organic pollutants into the future and reduce the risk and legacy for future generations
- address market impediments and streamline the regulatory frameworks so that national companies and small businesses can operate effectively and efficiently and manage products and materials responsibly during and at end of life
- provide national leadership on waste and resource recovery where it is needed and facilitate collaboration between the states on national issues.
- contribute to climate change, sustainability, innovation and employment opportunities, and
- be high impact and cost effective by setting clear national directions and through collaborative, carefully targeted action that incrementally builds on the existing efforts of governments over a ten year period.

NSW Container Deposit Scheme

From July 2017 NSW will commence a container deposit scheme. Under the NSW Container Deposit Scheme (CDS), people will be able to return eligible beverage containers for recycling in exchange for a 10-cent refund. A network of collection depots and reverse vending machines will open across NSW to receive empty beverage containers and deliver the 10-cent refund.

Councils will have the opportunity to participate in the operation of collection depots and in helping to inform the community about the scheme. Householders will have a choice to either continue disposing of their eligible beverage containers using their domestic recycling bins or return them to a collection depot or reverse vending machine to claim the 10-cent refund.

Eligible containers in the kerbside recycling will be able to be redeemed. The redemption mechanisms and the distribution of the refund and handling fees will be determined by the Implementation Working Group, which will be established by the NSW Environment Minister. This will result in savings that are likely to help councils improve their waste services and pass reduced council rates on to householders.

Councils can apply to operate collection depots. Alternatively, councils can choose to make their facilities available for others – such as charities, community groups or social enterprises – to run, for fundraising opportunities or to help provide a service to their local community.

NSW EPA: Industry Sector Rural Waste Landfills Compliance Performance Report - December 2002

As part of its Industry Sector Compliance Audit Program, the then NSW EPA (now OEH) conducted compliance audits of 30 rural landfill facilities across NSW. Waste disposal facilities within the NetWaste region that were audited include:

1. Bathurst Waste Management Centre - Bathurst City Council;
2. Daroobalgie Waste Dept - Forbes Shire Council;
3. Glenlogan Road Landfill Facility - Cowra Shire Council; and
4. Mudgee Waste Disposal Depot - Mudgee Shire Council.

It should be noted that three of the four facilities audited are located in the Eastern subregion. The objectives of the audits were to address each facility's compliance with the statutory instruments issued to it and with legislation administered by the NSW EPA, and to outline a program of follow-up actions needed to address non-compliances and to improve environmental performance. The key issues identified from the audits related to:

- prevention of air pollution;
- prevention of water pollution;
- land management and conservation;
- prevention of hazards and loss of amenity;
- monitoring; and
- administrative requirements.

It is understood from OEH (EPA) that this program of auditing rural landfills is likely to continue. At this stage, it is not known whether this program will focus solely on licensed facilities or whether non-licensed facilities will also be audited.

Extended Producer Responsibility Statement 2004.

In March 2004, the then DEC (now OEH) released the Extended Producer Responsibility Priority Statement 2004.

This document identifies 16 wastes of concern with nine of these wastes receiving priority focus. The intention of this statement is to put the industries producing the identified waste on notice to act to reduce the amount and/or impact of their products in the waste stream. The criteria used to identify waste of concern suited to management by Extended Producer Responsibility (EPR) schemes were:

- detrimental environmental and/or public health impacts resulting from the recovery and/or disposal of the product;
- total volume of the waste requiring disposal and/or the percentage of the waste stream it comprises;
- potential for waste avoidance, reuse or beneficial resource recovery;
- potential to contaminate waste streams and limit opportunities for resource recovery;
- likelihood of illegal disposal through dumping or littering;
- level of community concern about the waste; and
- extent to which EPR is the appropriate tool for managing the waste.

In determining the extent to which EPR is the appropriate tool for managing a particular waste, consideration was given to whether:

- there are clearly identifiable producers;
- the producers have a reasonable capacity to take action;
- there is a well structure or organised industry sector; and
- there is a capacity to influence the whole supply chain.

Using the above assessment criteria, OEH has identified the following 16 wastes of concern that are suitable for management by EPR schemes:

1. computers;
2. televisions;
3. used tyres;
4. nickel cadmium batteries, excluding mobile phone batteries;
5. plastic bags;
6. agricultural / veterinary chemicals
7. agricultural / veterinary chemical containers;
8. mobile phones and batteries;
9. packaging waste, excluding plastic bags;
10. cigarette litter;
11. electrical products, excluding computers, televisions and mobile phones;
12. end-of-life vehicle residuals;
13. household hazardous and chemical wastes;
14. office paper;
15. polyvinyl chloride (PVC); and
16. treated timber.

Extended Producer responsibility is now supported through the National Waste Management Strategy as well (refer section 2.1.4).

LEGISLATIVE IMPLICATIONS

From the above legislation, regulations and policies, it is clear that the effective and responsible management of waste is a clear and important objective of the NSW Government. Furthermore, it may be seen that appropriately managed waste streams are increasingly being viewed as potential resources and therefore increasing efforts are being made to recover resources with the result of maximising environmental sustainability.

Along with the encouragement of responsible waste management, there is an increasing "tightening" of legislation to deal with parties (including Local Governments) causing environmental degradation as a result of poor waste management practices. This is evidenced by the numerous guidelines and associated reporting requirements and has seen the formation of hierarchies of responsibility along with the assignment of substantial penalties for environmental breaches or where a risk of significant harm is believed to exist. These point to an increasing requirement for those assigned with the

responsibility of managing waste to ensure that their operations incorporate mechanisms to deal with risk in a pro-active manner. Such mechanisms include constant monitoring of facilities, maintenance and updating of operating practices / procedures and long term planning to meet future requirements.

It is increasingly recognised that manufacturers need to exercise some degree of responsibility for the wastes which result from the consumption of their products. This is being considered in the development and implementation of extended producer responsibilities and stewardship schemes.

The NSW Waste Avoidance and Resource Recovery Strategy 2010 provides a framework for reducing waste and making better use of resources. A number of strategies proposed in the current plan will support and assist local governments in reducing waste to landfill.

The introduction of a waste and environment levy in NSW from July 2009 under the *Protection of the Environment Operations Act 1997*, in the Metropolitan Levy Area (MLA) and Regional Levy Area (RLA) has resulted in significant financial increases to dispose of waste in Sydney, Wollongong, Newcastle and the Blue Mountains. Prices have recently increased to \$135.70 per tonne with companies now looking at ways to reduce the amount of waste to landfill or more competitive landfilling options.

An increase in the fee also has the potential to increase the likelihood of illegal dumping as people try to avoid the additional costs.

Lithgow City Council does not currently have to pay the levy for locally disposed waste; however, waste being transported for disposal from the regulated areas is subject to the fee. Council therefore needs to understand the source of materials bought for disposal, particularly privately delivered larger loads of construction and demolition materials. A tracking system needs to be in place to log such materials and then to issue payment of the levy to the NSW State Government.

APPENDIX C – REVIEW OF 2011-2016 STRATEGY IMPLEMENTATION

Recommendation		Action	Priority	Timeframe	Status
1	Management (9.1)	Establish tracking system to identify disposal of waste from Regulated areas and payment of the Levy to State Government and to ensure waste from outside the Local Government Area is not accepted at the Lithgow SWF.	1	2011 - 2012	No waste from outside the LGA is accepted at the Lithgow SWF
2	Management (9.1)	Undertake a review of current contracts in line with the strategies to be implemented	1	2011 - 2012	Ongoing; current JRR contract runs from November 2013 to November 2023; HPH contractual arrangements dependant on Blackmans Flat facility becoming operational.
3	Management (9.1)	Review of resources to be undertaken to manage new or modified waste management systems.	2	2012-2013	Ongoing as part of Council's integrated planning and reporting process.
4	Landfills (9.2.1)	Blackmans Flat to be viewed as a best practice facility and to incorporate a range of waste technologies for a facility in 2021.	3	2011 (concept design) 2015-2016 (review waste and landfilling best practice)	Construction of Blackmans Flat delayed due to the revised Lithgow landfill plan.
5	Landfills (9.2.1)	Activate development consent for Blackman's Flat prior to December 2011.	1	2011	Has been activated.
6	Landfills (9.2.2)	Extend the life of Lithgow SWF for at least Stage 1 and 2. Consider including the required infrastructure for improved reuse / recycling opportunities.	1	2011 - 2012	Lithgow SWF life extended with revised plan. Lithgow waste transfer plans

Recommendation		Action	Priority	Timeframe	Status
					have been developed
7	Landfills (9.2.3)	Undertake community engagement and education on the closure of the landfills and progress with Landfill closures according to closure plans	1	2011-2012	Some rural landfill closures have been delayed; revised target dates set. Council continuing to review wastes services for these areas. Consultation to be undertaken before any closures.
8	Transfer Stations (9.3)	Residents of Capertee be consulted on the closure of the landfill in 2018 and their potential use of a transfer station if constructed	3	2015 - 2016	As per item 7 above.
9		Develop transfer station at Glen Davis/Glen Alice to coincide with the closure of Glen Davis landfill in 2013	2	2012 - 2013	As per item 7 above.
10		A transfer station is included in the development of Blackman's Flat and this be developed as a first stage of the facility with infrastructure constructed to be easily transferrable to the new facility when it is fully commissioned	1	To be determined following community consultation	This option is being considered as part of this revised waste management strategy. Consultation to be undertaken before any development commences.
11		Design the new transfer stations with recycling of a range of materials in mind	2	2011 - 2016	As per item 7 above.
12		Consideration be given to the upgrade of the existing three transfer stations to provide the opportunity for	2	2011 - 2016	The City is continuing to review wastes services for these areas.

Recommendation		Action	Priority	Timeframe	Status
		recycling and materials separation			
13	Kerbside Collection Services (9.4)	Include requirements within the planning for the Blackmans Flat facility measures for the management of organic materials through composting.	3	2014 - 2015	See item 10 above.
14		Prepare proposal to consolidate the current kerbside collection scheme in the short term by replacing the recycling crate with a bin. Seek costs for the provision of the service and any upgrade requirements of the MRF.	1	2011 - 2012	Under the current JRR contract, fortnightly kerbside collections in the urban and village zones of 240L MSW MGBs containing mixed recyclables
15		Prepare proposal for an ultimate upgrade to a 3 bin kerbside collection scheme in the long term. Seek costs for the provision of the service and upgrade requirements of the MRF, greenwaste operations etc.	3	2016 +	Not yet commenced.
16		Undertake community engagement on the kerbside collection services and preferred options and commitment for implementation	1	2011 - 2012	Not yet commenced.
17		Continue the biannual Clean up Collection service	1	2011 - 2016	Ongoing
18		Review the opportunities for the collection of organics within the kerbside collection service and new transfer stations.	3	2016+	Not yet commenced.
19	C&D (9.5)	Undertake a review of the C&D received to landfill sites and determine whether Council itself, can sort, crush and either sell or reuse the materials in road	3	2016+	Not yet commenced.

Recommendation		Action	Priority	Timeframe	Status
		base or drainage materials.			
20		Identify the opportunities to partner with C&I organisations in educating the community on waste management and minimisation. This can particularly be the case regarding plastic bag usage or in the case of larger grocery organisations the minimisation of food wastes.	3	2011 - 2016	City to comment
21	HHW (9.7)	Continue to support and utilise the annual Netwaste organised program for the collection and disposal of household hazardous waste.	2	2011 - 2016	Ongoing
22		Install a hazardous waste store at the Lithgow SWF to allow for the safe collection of chemicals and other items such as batteries, gas bottles, paints and mercury fluorescent tubes over the year. A similar store should also be included in the future development for Blackmans Flat.	2	2013 - 2014	Within the design of the Waste Transfer Station for each of these sites space for a CRC is provided. This will be dependent of EPA funding. Until this time the City will provide an annual household chemical cleanout service
	Resource Recovery (9.8)				
23	E-waste	Continue to support the Netwaste organised annual program for the collection and recycling of E-waste.	3	2011 - 2016	Ongoing
24	Paper/ cardboard	Continue the current collection of paper and cardboard and recycling services. Allow for paper and cardboard collection at the Waste transfer stations	1	2011 - 2016	Ongoing; No collection at the at the waste transfer stations

Recommendation		Action	Priority	Timeframe	Status
25	Greenwaste	Continue with this contract for its agreed term	2	2011 - 2016	City provides a green waste collection service during the growing season. This occurs in October, December, February and April. This material is retained separate to the landfill but buried as part of the landfill at present.
26	Mattresses	Explore any potential opportunities for collection and recycling in the future as they become available.	3	2012 - 2016	Not yet commenced; there is not a large number of mattresses disposed of
27	Plastic bags	Council to work with retailers and food suppliers to reduce the use of plastic bags through community education	3	2012 - 2016	No yet implemented, could be part of future programs.
28	Tyres	Confirm the number of tyres disposed to Lithgow SWF. Investigate the disposal method for commercial tyres in the area and seek possible alliances for the disposal / reuse of all tyres.	2	2011 - 2012	The statistics indicate a total of 33 tyres landfilled in the 2015-16 financial year. No arrangements for alternative disposal methods put in place yet.
29	Steel	Continue with the arrangements already in place for the collection and recycling of scrap metal. Facilities should be provided for collection at transfer stations and Blackmans Flat.	2	2011 - 2016	Ongoing; No facilities at the transfer stations. See item 10 above.

Recommendation		Action	Priority	Timeframe	Status
30	Event management	Establish a policy and protocol for waste-wise events for both Council and community run events.	3	2012 - 2013	Currently has a Recycling and Public Place Recycling Program at City events such as Halloween provided through the waste education contractor.
31	Education (9.9)	Develop a long term community (residential, schools, commercial and Industrial) engagement and education plan covering waste minimisation, recycling / reuse and the future services of Council regarding closure of landfills, the development of transfer stations and new landfill sites.	2	2012 - 2013	Community consultation undertaken by Envirocom, supported by the JRR contract. Additional community consultation will be required as the City progresses landfill closures. The communication mechanisms are in place to manage this.
32		Identify and utilise where possible education opportunities and programs offered through Netwaste, OEH and other government departments	3	2011 - 2016	Ongoing Through the JRR contract, ongoing education undertaken. Council does participate in media promotions of Netwaste activities although these are limited. There are possibilities for additional education with other agencies if resources allow.
33	Carbon management(9.1	Investigate the possibility of the inclusion of methane gas collection, extraction and reuse system,	3	2016+	Not yet commenced. Unlikely to be included in Blackmans Flat

Recommendation		Action	Priority	Timeframe	Status
	0)	including costs to understand the capital requirements and potential pay backs for the Blackmans Flat Facility.			Facility