Inverell Shire Council

Solid Waste Management Strategy

2010

Less Waste More Resources

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Contents

19. List of Charts

20. List of Figures

21. List of Photos

Glossary

Avoidance
Eliminating the generation of waste at its source. Avoidance encourages the community to reduce the amount of waste it generates and to be more efficient in its use of raw materials. Synonyms: Waste Prevention and Waste Reduction

Biosolids
Residual sludge from wastewater treatment plant operations.

Commercial and Industrial (C&I)
Inert, solid or industrial waste generated by industries (including shopping centres, restaurants, offices, manufacturing, repair workshops, all retail outlets, hotels, clubs etc) and institutions (including schools, hospitals, universities, nursing homes and government offices), excluding construction and demolition, municipal waste, clinical and related waste and hazardous waste.

Composting
The process of controlled biological decomposition of organic wastes that are separated from the waste stream either at the source or in the initial stages of a recovery process. This includes backyard, neighbourhood and regional facilities.

Construction and Demolition (C&D)
Materials in the waste stream that arise from construction, demolition, refurbishment, excavation activities.

Contamination
Any introduction into the environment or a product (water, air, soil, or recyclable materials) of micro-organisms, chemicals, wastes, or wastewater in a concentration that makes the environment or the product unfit for its intended use. Contaminants can have a detrimental impact on the quality of recycled materials and can spoil the potential for resource recovery.

Disposable
Any product or material that is designed to be thrown away after one use.

Disposal Fee
The fee charged at designated disposal and recovery facilities for the disposal of waste. These are usually applied as 'dollars per tonne' of waste disposed. Synonym: Gate Fee

Diversion
The recycling or reprocessing of materials that would have otherwise been disposed of in landfill.

Generators
Sources of waste generation, typically used to refer to the domestic, commercial and industrial, or construction and demolition sectors.

Greenwaste
Waste comprising vegetative organic materials including garden waste and wood waste.

Household Hazardous Waste
A substance which is explosive, corrosive, flammable, reactive, contagious, and/or toxic, as well as the products used to contain the substance. This waste originates from domestic sources (households). Such materials include paints, cleaning liquids, oils and varnishes, as well as syringes and home-generated medical waste.

Materials Recovery Facility
A facility at which recyclable materials are separated into individual commodities using varying degrees of mechanised and hand-sorting.

Organic Waste
The part of the waste stream that is comprised solely of animal or vegetable matter and typically from which a compost can be created.

Recyclable Material
Able to be processed and used as a raw material for the manufacture through a commercial process of either the same product or another product.

Recycle
The process of source-separating from the solid waste stream products that are no longer useable in their present form and that can be used in the manufacture of new products. This includes composting.

Residual Waste
The material left after all resources have been recovered for reuse or recycling which is generally disposed of to landfill.

Reuse
The repeated use of a product in the same form but not necessarily for the same purpose, without further manufacture.

Solid Waste Stream
The aggregate of all solid waste components, and also the process through which they move from point of generation to ultimate disposal.

Source Reduction
An activity that eliminates or decreases the generation of waste at the source.

Source Separation
The separation of recyclables from the solid waste stream at the source of generation (typically in the home or workplace) so that recyclable material is kept clean and marketability is improved.

Sustainability
Activities that meet the needs of the present without compromising the ability of future generations to meet their own needs. It is a triple bottom line approach, that examines social, economic and environmental factors

Transfer Station
An intermediate facility in the waste system where local waste collection vehicles deliver their loads for further trans-shipment in larger waste-hauling vehicles to final disposal.

User-pay Principle
The concept whereby the more waste a generator produces, the more it will cost that generator.

Waste Minimisation
Reducing the quantity of waste requiring disposal through waste reduction, reuse, or recycling. Also referred to in this strategy as the sum total of reduction, reuse and recycling as a percentage of potential generation.

Acronyms

AWT: Alternate Waste Technologies

C&D: Construction and Demolition

C&I: Commercial and Industrial

CPRS: Carbon Pollution Reduction Scheme

DCP: Development Control Plan

DECCW: Department of Environment, Climate Change & Water

DWM: Domestic Waste Management

EIS: Environment Impact Study (or statement)

ESD: Ecologically Sustainable Development

EOI: Expression of Interest

GHG: Greenhouse Gas

LGA: Local Government Association

MGB: Mobile Garbage Bin

MRF: Materials Recovery Facility

MSW: Municipal Solid Waste

NIRW: Northern Inland Regional Waste (Group)

MUD: Multi Unit Dwelling

NGER: National Greenhouse & Energy Reporting

ORRF: Organic Resource Recovery Facility

Section A.
Introduction

1. Introduction by the Mayor

One of Inverell Shire Councils traditional and key functions is the delivery of solid waste management services. As a community we probably don't spend too much time thinking about these services. So long as our bins are collected each week, little thought is put into the complexities and the many challenges that are faced when planning and delivering waste services.

Current trends in our lifestyles, our demand for goods and services, our use of finite resources and our increasing concern for the environment, is significantly changing the way we manage solid waste.

Inverell Shire currently provides a well utilised and comprehensive level of waste services, however to meet the future challenges of providing efficient, cost effective and sustainable waste management, Council has developed a new draft solid waste management strategy. The Less Waste More Resources strategy has addressed a wide range of issues and makes some challenging recommendations. The strategy aims to provide guidance to Council in its endeavours to continually improve services and to make important changes to the way we have traditionally dealt with our waste.

Council has endorsed the draft strategy for community consideration prior to formal adoption. I commend the Less Waste More Resources Strategy and look forward to your involvement, feedback and support.

Councillor Barry Johnston
Mayor
Inverell Shire Council

2. Executive Summary

Inverell Councils Strategic Plan has adopted five aspirational goals known as Destinations. The management of waste has strong links to all five destinations and this strategy aims to assist Councils movement towards its adopted destinations.

1. "A recognised leader in the broader context."
   The waste management strategy contains a number of provisions that will not only achieve positive waste management goals but will enable Council to demonstrate that it is a leader in waste management both locally and regionally. A planned move to a 3 bin waste service that will divert organic waste from landfill and reduce greenhouse gas. The introduction of public place recycling, which will recover valuable resources and advances the recycling message and Council will importantly look at its own organisation, its procurement practices and other initiatives to minimise waste and recover resources.

2. "A community that is healthy, educated and sustainable."
   The provision of a comprehensive waste management services is well recognised as a critical public health service. The strategy aims to enhance existing waste management services and recommends the expansion of the kerbside collection area to a number of rural villages. The strategy also recognises the importance of education and recommends that waste education funding be doubled and that an education plan be developed to ensure funding is effectively utilised.

3. "An environment that is protected and sustained."
   The delivery of waste management services can have significant environmental impacts both direct and indirect. A major focus of this strategy is to recognise and recommend actions that will minimise environment risk and provide opportunities to offset environmental impacts that can not be eliminated. The current 12 rural landfill sites present Council and the community with a major environmental, public health and financial risk. The strategy proposes a 5 year program to close and rehabilitate all rural landfills and develop waste transfer stations at Ashford, Boshaw, Delungra and Yetman. The strategy also recognises that there are indirect social and environmental impacts known as externalities resulting from the delivery of waste services and proposes a method to fund actions that will minimise or offset these impacts.

4. "A strong local economy."
   Effective waste collection services and accessible waste processing and disposal facilities plays a critical role in a strong local economy. The long term life and close location of the Inverell Landfill and MRF are a major asset for business and the wider community. Managing the Inverell Landfill in an environmentally sound and efficient manner that maximises its life is a fundamental theme of the strategy. Every effort must be made to divert waste away from landfill so that the landfill is available for the disposal of material that has no viable alternate use. It should also be recognised that the provision of waste management services is a major local employer that contributes to a strong local economy.

5. "The Community is supported by sustainable services and infrastructure."
   Waste management services have been provided in the Inverell Shire for many decades and it is the aim of this strategy to ensure waste services are enhanced and sustainable into the future. Reducing waste going to landfill, developing and maintaining infrastructure to maximum effect, attaining elevated community engagement in sustainability and waste management through awareness and education and engaging in regional cooperation are fundamental to this strategy. Another key principle of the strategy is to ensure waste related pricing is based on full and true costs so that waste funding is sustainable and that pricing sends the right economic signals that will assists Council meet its waste management goals.

3. Sustainability Principles

Sustainability is a word that can encompass many meanings. Sustainability as far as local government is concerned involves identifying what our community really cares for on a long term basis – ecological, economic, social and cultural values – and engaging in behaviour that ensures these values are maintained for present and future generations.

A key element of sustainability involves the need to be careful when using and managing resources. Local government through its waste management practices has a major role to play by treating waste as a valuable resource, by encouraging our community and our own organisation to minimise the generation of waste and to engage in practices that will recover resources from the waste stream.

This strategy incorporates sustainable thinking and endeavours to follow sustainability principles in its decision making and recommendations. The following table 3.1 puts sustainability principles into a resource management context.

Table 3.1: Sustainability Principles in a Resource Management Context

The Precautionary Principle	Intergenerational Equity	Conservation of Biological Diversity and Ecological Integrity	Improved Valuation, Pricing & Incentive Mechanisms
Minimise the chance of resource management decisions causing serious environmental problems even if we are not sure that these problems will occur	The fair efficient use of resources to ensure that current and future generations can meet their needs and expectations.	Improved resource management systems, which enhance and protect the natural environment.	Improve the way we undertake valuation of environmental costs and benefits and use this information when making decisions.

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4. Vision Statement and Goals

"A Community for all"

The vision "A community for all" is supported by Councils mission statement which is "to work with the community in providing and facilitating the provision of services that enhance the quality of life of all Shire residents".

The Less Waste More Resources Strategy has been developed to support Councils vision and mission statement. Solid waste management services are a key function of council that enhances the quality of life of Shire residents, however the success of waste management services rely heavily on the partnership between Council and the community.

The key goals of the Less Waste More Resources strategy are:

1. To actively work towards achieving the targets established by the NSW Waste Avoidance & Resource Recovery Strategy.
2. To engage with and work with the community to improve waste management outcomes.
3. To value waste as a potential resource.
4. To implement the strategy within the agreed time frame

Section B.
Background Information

5. Current Waste Management Settings
5.1 Local Setting

5.1.1 Waste Statistics

The Total Waste Stream

Inverell Council has very little data available on the quantity and characteristics of its waste stream. Quality data is essential to good decision making and it is therefore appropriate for Council to resource a detailed waste characteristics study. To provide a profile of what the Inverell waste stream is likely to be, the following data has been taken from the "Waste Avoidance & Resource Recovery Report 2008" produced by the NSW Department of Environment, Climate Change & Water.

The average annual total waste stream for Regional NSW is 1,637 kg per person of which 658 kg is recycled. With a current population of 16,700 it can be extrapolated that Inverell Council has a total waste stream of 27,000 tonnes.

Of the total waste stream around 15,500 tonnes of waste is being landfilled. If each of the 12 rural landfills is receiving 300 tonnes per annum it can be estimated that the Inverell landfill is receiving 12,900 tonnes per year.

Domestic Waste Composition

Again with very little local data available, the Local Government Strategic Action Plan Tool, using default data has been used to estimate the quantity and make up of the domestic waste stream. It is estimated that Inverell Shire generates 5910 tonnes of domestic waste annually of which 3723 tonnes are landfilled and 2187 tonnes are recycled. Figure 5.1 below indicates the composition of the domestic waste component being landfilled. It is noted that 57% is organic food and garden waste and up to 30% is potentially recyclable.

Domestic Waste Composition

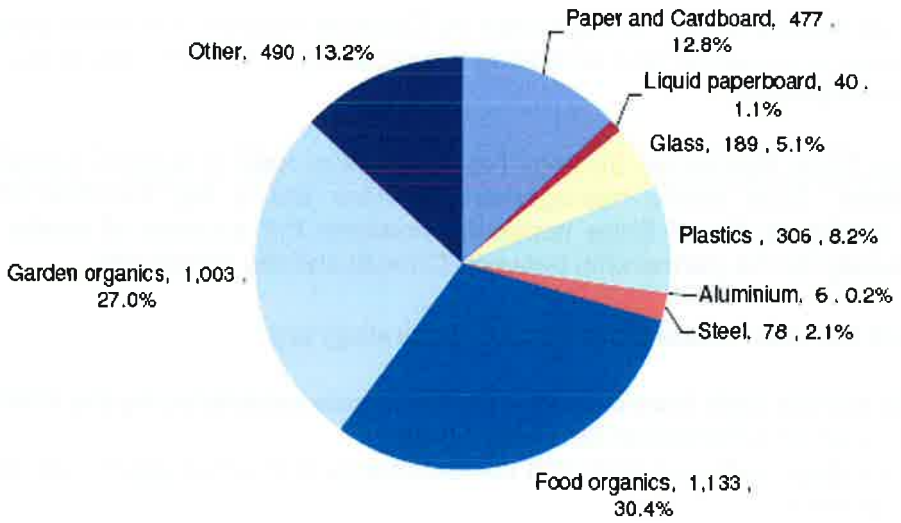


Chart 5.1

5.1.2 Domestic Kerbside Waste Collections

Residual (garbage) waste

Inverell Council provides a weekly residual waste collection service utilising 240litre mobile garbage bins (MGB's). The service is rendered under contract by local company Blue Gem Contractors P/L. The collection contract with Blue Gem Contractors will expire on the 31 May 2012.

The service area is predominantly based around Inverell and the villages of Gilgai, Delungra and Ashford. There are 5012 domestic services currently being rendered. All collected residual waste is taken to the Inverell Landfill for disposal.

Inverell kerbside waste collection truck

Recycling Service

A fortnightly co-mingled recycling service utilising 240litre MGB's is also provided under contract by Blue Gem Contractors. Material collected from the 5012 services is taken to the Inverell material recovery facility (MRF) for sorting and marketing by contract operators Northaven Limited. Approximately 2,260 tonnes of recyclables are marketed by the MRF annually.

Currently the service is collecting glass bottles and jars, paper, cardboard, mixed plastic, aluminium and steel cans.

Table 5.1: Recyclables Marketed Annually by Northaven

Product	Paper/Card	Glass	PET	HDPE	H. Plastic	Film	Al Cans	Steel Cans
Tonnes	1699	395	21	20	33	41	16	34

Apart from the obvious resource saving benefits achieved through domestic waste recycling, Chart 5.2, 5.3 & 5.4 demonstrate the greenhouse gas, energy and water saving outcomes that are derived from domestic recycling in Inverell Shire.

Bailed paper at the Inverell MRF

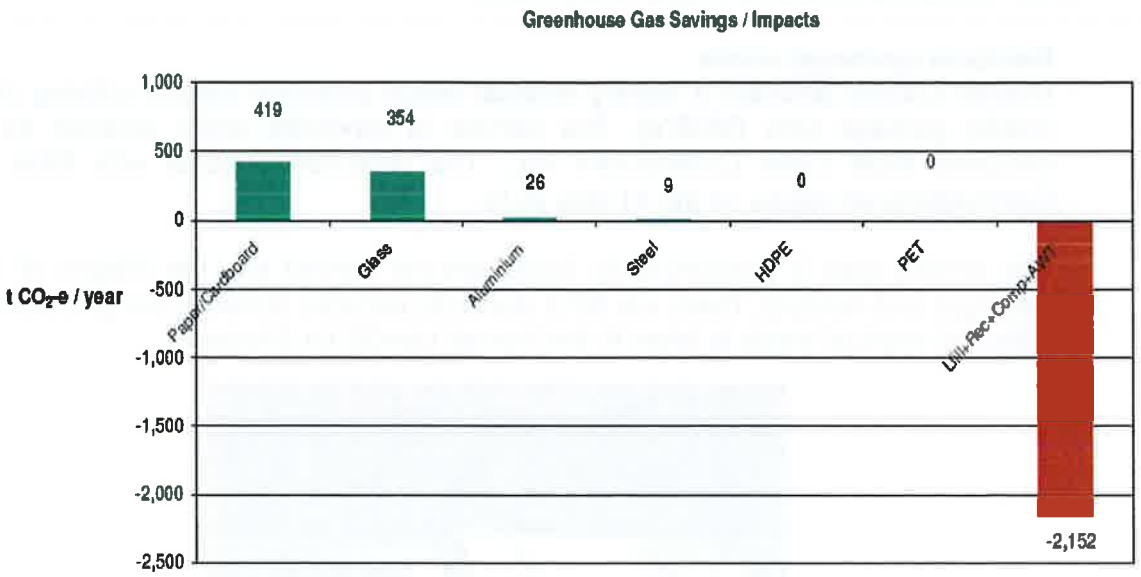


Chart 5.2
Source: DECCW Local Government Strategic Action Plan Tool

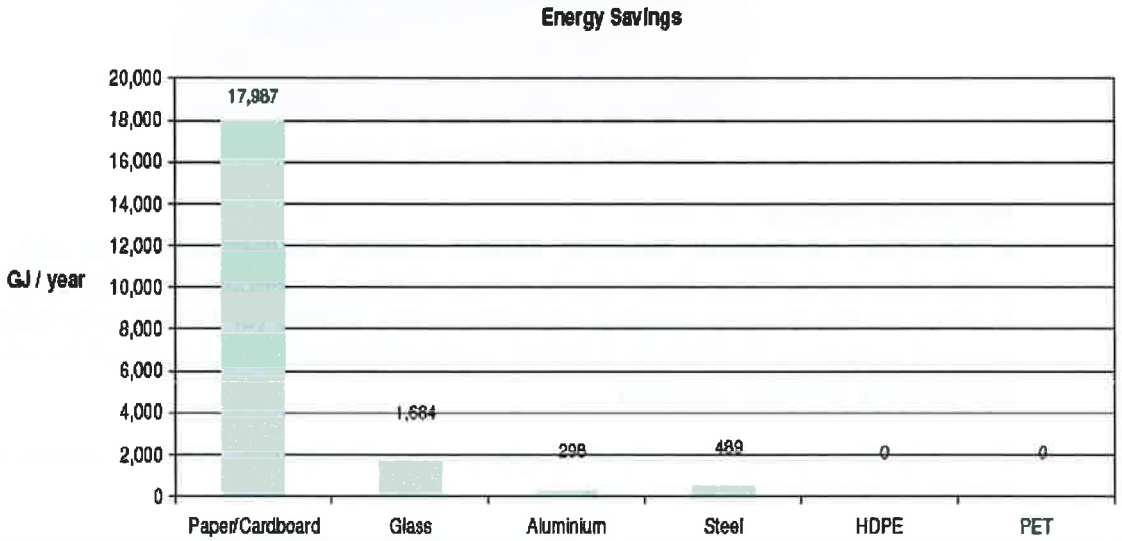
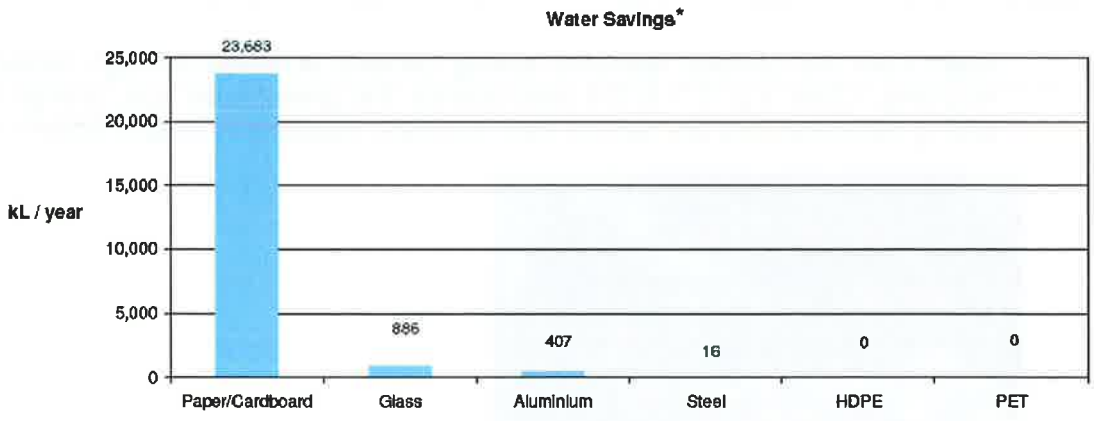


Chart 5.3
Source: DECCW Local Government Strategic Action Plan Tool



* Water usage is indicated by a negative number

Chart 5.4
Source: DECCW Local Government Strategic Action Plan Tool

5.1.3 Domestic Waste Management Charges

The Domestic Waste Management charge is the annual charge levied on properties that are entitled to receive a kerbside collected garbage and recycling service. The charge has increased by $25 over the past four years which is generally in line with CPI movements.

It is noted in table 5.1 below that Council introduced a $32 waste levy on all rateable properties in 2009/10 to make better provision to develop and maintain non domestic waste infrastructure such as transfer stations and landfills. The 2009/10 domestic waste charge was reduced to offset the introduction of the waste levy.

Table 5.2: Domestic Waste Management Charges		
Year	DWM Charge	Levy
2009/10	$228.00	$32.00
2008/09	$259.00	Nil
2007/08	$237.00	Nil
2006/07	$235.00	Nil

5.1.4 Residual Waste Disposal

The Inverell Landfill located on Burtenshaw Rd, Inverell is the principal waste disposal facility serving the Inverell Council area. It is managed under contract by Blue Gem Contractors. The landfill currently does not have a weighbridge; therefore the quantity of waste being handled by the landfill is only an estimate, at around 13,000 tonnes per annum.

Apart from providing a residual waste disposal point the landfill provides designated areas for storing diverted greenwaste, concrete waste, scrap metal and timber. The site also accepts fluorescent tubes, printer cartridges, chemical drums, batteries, waste oil and general recyclable items for reprocessing.

There are also 12 rural landfills being operated to service rural communities. A variety of management arrangements are in place however most are unsupervised sites with unrestricted access. The rural landfill sites are a major challenge for Inverell Council and accordingly they are a major focus for this strategy.

Inverell landfill tip face

Fluoro recycling Inverell landfill

5.1.5 Other Waste Management

Council currently support a number of other waste management programs that aim to divert potentially hazardous waste from landfill. These include the annual chemical cleanup, sharps disposal bins, waste oil, fluorescent tube, batteries and printer cartridge recycling.

5.1.6 Waste Education

Council does not have a formal waste education plan. Councils waste education effort is generally directed at promoting up coming waste related events and programs such as chemical cleanups, drum muster, clean up Australia day, free landfill access days and sharps disposal points. Council facilitates school visits to the recycling centre and supports the Murphy school recycling program and the Carbon Cops program.

Waste education is also supplemented by regional TV advertising undertaken by the Northern Inland Regional Waste Group.

5.2 Regional Setting

5.2.1 Northern Inland Regional Waste Group (NIRW)

The NIRW Group was formed in 1998 and is a voluntary Local Government networking group, established to specifically address waste management issues at a regional level. The group's membership consists of the thirteen local government councils from the North West and New England regions of New South Wales.

The member Councils are Armidale Dumaresq, Glen Innes, Severn Shire, Gunnedah Shire, Guyra Shire, Gwydir Shire, Inverell Shire, Liverpool Plains Shire, Moree Plains Shire, Narrabri Shire, Tamworth Regional, Tenterfield Shire, Uralla Shire and Walcha Shire.

NIRW Vision

"NIRW's vision is to address the range of issues identified by the waste hierarchy. NIRW's focus is to facilitate sustainable business development in the New England and North West region of New South Wales that provides solutions to dealing with the waste we generate. The activity will result in stronger relationships, greater awareness and increased economic and employment benefits for the region."

NIRW Objectives

Since inception, NIRW has operated with a set of guiding principles. These principles provide an overall direction for the group that remains constant regardless of individual programs introduced over time.

- Develop and implement regional programs that achieve a sustainable balance between the region's social, economic and environmental needs.
- Encourage partnerships and cooperation between member Councils and external stakeholders in a collaborative approach to addressing sustainability issues for the overall benefit of the Region.
- Identify and investigate all opportunities for coordinated approaches in the provision of waste management services and the achievement of waste avoidance and waste minimisation within the region.
- Consider all waste management issues affecting member Councils, where possible, and speak as one voice in response to State and Federal Government initiatives or directives.

- To prevent the generation of waste and promote awareness by commerce and industry with the ideal being – what is good for commerce and industry is good for the environment.
- To maximize the recovery, recycling and reuse of resources from waste whilst addressing the concept of renewable energy along with a change of thinking.

5.2.2 Regional Cooperation

Inverell Council has been involved in a number of regional waste management projects with the NIRW Group including concrete crushing regional contract, drummuster, chemical cleanups, community sharps disposal bins, landfill full cost reporting and carbon trading implementation reports. It is anticipated that as waste management becomes more complex, looking to regional partnerships will be more critical to ensure waste services remain cost effective.

5.3 National & State Setting

5.3.1 National Waste Policy

The Department of Environment Water Heritage & the Arts (DEWHA) is the commonwealth department responsible for developing partnerships with the States, local government and industry to address issues of resource recovery and re-use. Generally the DEWHA tackle national waste management issues such as the waste oil industry stewardship program and the National Packaging Covenant (NPC). Broad sectors of industry such as automotive waste (including tyres), oil recycling, the plastics and electrical industry, and all industries within the packaging chain have been identified as priority areas for the government. A national product stewardship to manage recovery and recycling of end of life computers and televisions was adopted in November 2009, however it will be some time before the scheme will become operational.

The National Waste Policy: Less Waste, More Resources was released by the Federal Government in November 2009. The National Waste Policy builds on the 1992 National Strategy for ESD commitments to improve the efficiency with which resources are used, reduce the impacts 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 compliment, existing policy and actions at all levels of government.

The policy acknowledges that waste generation continues to increase with a 31% increase between 2002 and 2006 and that the waste sector generates around 15 million tonnes of greenhouse emissions per year. However it also points out that communities are calling for recycling to be more readily available in the work places and public spaces, and for infrastructure to be established to help them deal appropriately with waste from their consumption choices. Recent 'choice modelling' and attitudinal surveys, suggest that communities are willing to pay for increased access to resource recovery facilities that deliver significant recycling outcomes.

The aims of the national Policy will be to:

- avoid the generation of waste, reduce the amount of waste for disposal, manage waste as a resource and ensure that waste treatment, disposal, recovery and re-use is undertaken in a safe, scientific and environmentally sound manner, and
- contribute to the reduction in greenhouse gas emissions, energy conservation and production, water efficiency and the productivity of the land.

5.3.2 Carbon Pollution Reduction Scheme and National Greenhouse & Energy Reporting (NGER)

The Carbon Pollution Reduction Scheme (CPRS) is the Federal Governments response to greenhouse gas emissions and climate change. The Federal Government has produced a greenpaper based on the Garnaut Report, a white paper that establishes the fundamentals behind CPRS and more recently the Carbon Pollution Reduction Scheme draft exposure bill. Legislation to introduce the scheme from 1st July 2011 was defeated by the senate in December 09. The Government proposes to reintroduce the legislation in February 2010 for further consideration, which could mean that there will be a significant difference between the currently proposed scheme and the one that gets approved, if approved.

The CPRS is a "cap and trade" scheme, where the Government will establish a cap on the total amount of greenhouse gas emissions by the issuance of a set number of permits. Although there is no limit on emissions from individual entities those significant emitters that are covered by the CPRS are obliged to acquire a permit for each tonne of gas emitted in a particular year. Entities that are obliged to acquire permits will be able to trade them, which will thereby place a price on emissions. Over time the government will also reduce the number of permits available each year which will aim to meet lower emission targets.

The Government had made a minimum, unconditional commitment to reduce Australia's emissions by 5% over 2000 levels by 2020 and a conditional commitment to a 25% reduction by 2020 if a global agreement is struck to stabilize CO2 levels at 450 parts per million (the climate change 'tipping point') or less by 2050.

The CPRS will have generalised effects on most public and private sector entities and individuals, such as increased energy and fuel costs through coverage under the CPRS of the stationary energy and transport sectors. There will therefore be an indirect impact on Local Government even if the Council does not exceed the threshold for direct involvement in the CPRS.

The NGER Act 2007 established a national framework for corporations to report greenhouse gas emissions and energy consumption and production from 1 July 2008 although the CPRS scheme will not commence until 2011. The Act is administered by the Australian Government Department of Climate Change and it makes registration and reporting mandatory for corporations which meet specified thresholds.

There are two levels of thresholds at which corporations including Councils are required to apply for registration and report if exceeded – corporate threshold and facility threshold.

Corporate thresholds: Corporate thresholds decrease progressively in phases during the first three years of the reporting system beginning on 1st July 2008. A corporate group will meet the corporate threshold for the 2008/09 financial year if facilities under the operational control of the organisation emit 125 kilotonnes CO2e or more of greenhouse gases or produce or consume 500 terajoules or more of energy during the year. The thresholds for 2009/10 are 87.5 kilotonnes CO2e of greenhouse gases or 350 terajoules of energy. For 2010/11 are 50 kilotonnes CO2e of greenhouse gases or 200 terajoules of energy.

Facility thresholds: There are three types of thresholds that apply to individual facilities, these being:

- Greenhouse gas emissions of 25,000 tonnes of CO2e;
- Energy production of 100 terajoules; and
- Energy consumption of 100 terajoules.

Proposed changes to the NGER Act 2007 could result in a secondary threshold for landfills being 10,000 tonnes of CO2-e, bringing it in line with the thresholds proposed under CPRS. The secondary threshold is known as the proximity threshold under CPRS. It is aimed at smaller landfills that do not exceed the 25,000 tonne threshold and are located within 80kms (distance not yet confirmed) of a larger landfill that exceeds the normal 25,000 threshold. The threshold for the smaller landfill will be reduced to 10,000 tonnes to discourage waste from being transferred from the larger landfill to the non registered smaller landfill.

If approved, Australia will be the first Government in the world to introduce a carbon trading system covering the landfill waste sector. Unlike other industries, landfills will need to account for emissions during its active life, as well as post closure emissions. Landfills will therefore have to continue to provide permits for emissions generated for possibly 50 years after closure.

Having to purchase permits for such a long period after the landfill closes, creates a significant financial challenge and risk. Sufficient funds will need to be set aside during the life of the landfill to cover future obligations in a climate of not knowing how long the landfill will produce emissions above the threshold and what the future cost of permits will be.

Does Inverell Landfill Exceed the Facility Thresholds?

To determine the impact of CPRS on the Inverell Landfill, Council in association with NIRW group engaged Renewable Australia Pty Ltd. Based on the currently available data and the proposed legislation, Renewable Australia estimated that the Inverell Landfill was emitting 11,322 tonnes CO2-e annually which would mean that the Landfill would not exceed the 25,000 tonne facility threshold and would be unlikely to exceed the threshold during its remaining life.

If the secondary 10,000 tonne threshold was applied the threshold would be exceeded and it would be highly likely to continue exceeding during its remaining life unless substantial mitigating measures are implemented. If the proximity threshold remains at the proposed 80km's, CPRS is not expected to apply to the Inverell landfill. If however the secondary threshold by way of a larger proximity distance is applied to the Inverell landfill there will be significant impacts for Council. An accurate record system will need to be introduced so that the reporting of emissions and energy use can be undertaken. Financial management arrangements will also need to be put in place to fund the current and post closure purchase of carbon permits.

Opportunities to Mitigate Emissions

Whether or not the Inverell landfill exceeds the CPRS threshold, it is likely to be the largest generator of greenhouse gas under Councils control. Council as a responsible public authority should be keen to play its part in reducing local greenhouse gas generation and will explore and implement actions to reduce emission from the Inverell landfill.

Waste Minimisation – Inverell Council is active in waste minimisation however CPRS provides greater incentive to reduce waste, particularly organic waste to landfill. There are a number of opportunities that could be explored to divert waste away from landfill. The introduction of a kerbside organics collection service would be one positive step to reduce the emission of greenhouse gases.

Landfill Gas Capture and Flaring – Perhaps one of the most beneficial measures to reduce emissions at landfills is to capture and flare landfill gas to convert the methane to CO2 or if there is sufficient gas, to use it to generate electricity. This would be a costly exercise and may not be feasible due to the limited amount of gas being generated by the Inverell landfill. This action could be particularly important if it would ensure that the Inverell landfill did not exceed the CPRS thresholds.

5.3.3 State Government Policy

The Department of Environment Climate Change and Water (DECCW) has responsibility for waste policy in NSW. The government's waste policy is set out in its NSW *Waste Avoidance and Resource Recovery Strategy 2007* (WARR). This strategy provides a framework for reducing waste and making better use of our resources.

The Strategy establishes "where we are now" and "where we want to be in the future" and the challenges we face to get there. It establishes targets and an action agenda which reflect Australian and international best practices and performance.

The Strategy is based on the following principles, which will guide our actions.

- Sustainability
- Economic benefits for NSW
- No "one-fit" solutions
- Guided by outcomes
- Partnership based approaches
- Local solutions
- Whole of lifecycle information
- Improvement of existing systems
- Community involvement in decision making
- An integrated approach

Frameworks and Targets

The *Waste Avoidance and Resource Recovery Strategy* identifies four key areas and broad targets where we must achieve outcomes.
These are:

- Avoiding and prevent waste
- Increased use of renewable and recovered materials
- Reducing toxicity in products and materials
- Reducing litter and illegal dumping

Table 5.3: NSW Waste Avoidance and Resource Recovery Strategy Targets	
Outcome area	**Target**
Preventing and avoiding waste	• To hold level the total waste generated for the next 5 years
Increasing recovery and use of secondary resources	By 2014, to: • Increase recovery and utilisation of materials from municipal sector from the current 26% to 66% • Increase recovery and utilisation of materials from the commercial & industrial sector from the current 28% to 63% • Increase recovery and utilisation of materials form the construction & demolition sector from the current 65% to 76%
Reducing toxic substances in products and materials	By 2014 or earlier: • To phase out priority substances in identified products as a first choice or if not possible to achieve maximum recovery for re-use and: • Where identified products containing these priority substances require disposal as a last resort, the permitted "leachability" of the substances will be reduced to the levels that are permitted for inert waste.
Reducing litter and illegal dumping	• Reduce total volume and tonnages of litter reported annually. • Reduce the total tonnages of illegally dumped material reported by regulatory agencies and Regional Illegal Dumping (RID) squads annually.

5.3.4 NSW Waste Levy

The NSW Government has for many years imposed a waste to landfill levy in the Sydney metropolitan area and the extended regulated areas around Newcastle, Central Coast and Wollongong. The basis for the levy is to impose a financial incentive to avoid landfill and therefore promote recycling and alternate waste technologies.

From the 1st July 2009 the Government extended the levy system to coastal areas from Sydney to the Queensland boarder. Again the basis for the levy is to promote better waste management practices, however it is also a significant financial stimulus for the NSW treasurery.

Although the Government has not signalled that the levy system will be extended to other regions of the State it is prudent to acknowledge that it is feasible that a waste disposal levy could easily be imposed on Inverell Council. Apart from the additional financial burden on the community, the future introduction of a levy does not have any direct impact on the actions outlined in this strategy other than to add support to any waste minimisation and resource recovery actions proposed.

5.3.5 Legal Aspects – Local Government Act

The management of waste by Local Government is required and regulated by a number of provisions of the Local Government Act, 1993. Making available a domestic waste management (DWM) service is a requirement of each local council and the cost of providing this service is to be recovered by a dedicated annual charge to those for whom the service is available. A Council may also provide additional DWM services such as (annual) 'council clean ups' as part of the DWM service. Councils may provide waste

management services to non-domestic users as well for which annual and/or user pays charges may be levied and accounted for separately from DWM charges.

User charges associated with domestic waste management (as distinct from other non-domestic waste management) service provision are to be developed on the basis of 'reasonable cost' (refer section 14.1), and a clear separation in accounting terms is to be made between domestic and other waste management service provision.

Recommendations

1. *That waste data collection and records be improved by developing a weighbridge at the Inverell landfill.*
2. *That waste data collection and records be improved by receiving detailed quarterly recycling reports from Northaven.*
3. *That a domestic waste characterisation study be undertaken, potential regional project with NIRW group.*
4. *That Council continue to actively participate in the NIRW group.*
5. *That Council monitor development with CPRS.*

Section C.
Future Strategy

6. Community Consultation

An informed and supportive community is essential if a new waste management strategy is to be successfully implemented. Community consultation will therefore be an important input to this strategy. It is proposed that the draft strategy will be placed on public exhibition for a period of 6 weeks. Subject to community interest Council also proposes to hold a series of public meetings to obtain direct feedback on the draft strategy. The draft strategy will then be reviewed and a final draft presented to Council for formal consideration.

7. Domestic Waste management

7.1 Kerbside Residual Waste and Recycling Collections

Inverell Council provides an industry standard kerbside waste and recycling collection service predominantly to the urban area of Inverell. There are a number of rural villages and routes of travel to them, that could be economically serviced, providing more equitable service delivery, convenience to the householder, increased resource recovery, reduced demand on rural waste disposal sites and reduce inappropriate waste disposal practices.

There will of course be sections of these communities particularly larger property owners that may not support the introduction of waste collection services. Objections will be based on the additional cost burden, the distance of rural dwellings from the service roads and that their communities have been responsibly managing their waste and want to continue. It will be important that Council consults and have appropriate arrangements to deal with site specific concerns.

Community bin collection point in rural area

It is proposed that the following areas detailed in table 7.1 be provided with a domestic waste service from 1 July 2010. It is further proposed that other rural areas be investigated for inclusion into the collection area when tenders are called for the next waste collection contract in 2012.

Table 7.1: New Domestic Waste Collection Areas		
Proposed New Service Area	**Population**	**No. of Services**
Bonshaw	50	20
Bukkula	24	9
Cherry Tree Hill	25	10
Elsmore Village & properties on Elsmore Rd to Highway	110	44
Gum Flat Village & properties on Warialda Rd	87	35
Graman Village	40	16
Nullamanna Village & properties from Ashford Rd	72	29
Oakwood Village	27	11
Wandera Village	20	8
Auburn Vale Rd	140	56
Fern Hill	180	72
Wallangra	100	34
Total	**875**	**344**

7.2 Kerbside Organics Collections

There is a growing trend in domestic waste management towards providing a kerbside greenwaste collection service to urban areas. There are a number of valid reasons behind the introduction of these services.

- In many urban communities there is a strong community demand for a service that conveniently removes greenwaste.
- Greenwaste is estimated to make up to 27% of the domestic residual bin which goes to landfill.
- Foodwaste is estimated to make up to 30% of the domestic residual bin which goes to landfill.
- Organic waste in landfill is responsible for generating green house gas.
- Organic waste can be turned into valuable compost and soil conditioner rather than taking up landfill space. Very important and valuable to the black and red clay areas found in Inverell Shire.
- A kerbside organics collection service can therefore significantly reduce waste to landfill, reduce greenhouse gas and produce a valuable product.
- The only way to meet the State governments 66% diversion target is to provide an organics collection service.

There are however, a number of major issues that Council must address before it can make an informed decision on the introduction of a kerbside organics waste collection service:

- Is there community support for such a service?
- Is there a market for the products produced?
- Is the quantity of organics available sufficient to make collection and processing viable?
- What type of processing facility is most suitable and where can it be located?
- Is there an opportunity for regional cooperation?

The first opportunity to test community support for an organics collection service will be as part of the community consultation for this strategy. Even if there is only limited support at this early stage it should give Council confidence to proceed to investigate the concept in greater detail in time for the service to be included in the tender for the 2012 waste collection contract.

The key requirement for a successful organics collection service is the availability of an efficient processing facility. The low tech option would be an open windrow composting facility located at the Inverell landfill site. Such a facility can produce good quality compost and would be within the capabilities of Inverell Council or local contractor to finance the capital and operational costs of the facility. Tamworth City and Clarence Valley Councils operate this type of composting facility. The cost of operating this type of facility depends greatly on the quantity of organic material available and the market value of the end product. Although no detailed costing or local market research has been undertaken, experience from other regions would indicate that costs can be expected to be in the range of $35 to $45 per tonne which would equate to approximately $23 per domestic service per year. A valuable reference document for windrow composting was produced for the North East Waste Forum by Organic Force P/L.

The standard practice for a kerbside greenwaste collection service which would include garden and fruit and vegetable waste, is a fortnightly collection on the alternate week to recycling utilising 240 litre mobile waste bins. It could be expected that approximately 2000 tonnes of organic material would be collected and diverted from landfill annually. The anticipated cost for collection would be in the range of $30 per year per service which would make the total service cost for collection and processing via open windrow composting around $55 per service per year.

Apart from the environmental benefits of improved soils and reductions in greenhouse gas generation, the economic cost benefit of removing greenwaste from landfill is also compelling. It is generally accepted that landfill space can be valued at more then $60 per cubic metre which goes a long way towards justifying the service on the cost benefit of landfill space alone.

A more complex service which would include all food waste as well as garden waste is usually based on a weekly collection with residual waste moving to a fortnightly collection. It would be expected that this type of service would divert approximately 3000 tonnes of organic material from landfill annually. However by including all food waste in the service will most likely mean that an enclosed composing facility such as the ORRF facility currently operated for Port Macquarie Hastings Council would be required (refer Section 13). The quantity of organic material available to Inverell Council would be insufficient to make this type of facility financially viable, however on a regional basis this type of technology may be viable and could be explored through the NIRW group.

7.3 Bin Standards

One of the issues facing people as they move to, or visit a new area is that there are many variations to the way waste services are delivered. This leads to confusion and an increase in contamination particularly of the recycling service. The DECCW is recommending that as much as possible, given local circumstances, waste services should be similar throughout the state. To facilitate this there is an Australian Standard 4123 for the design and manufacture of mobile waste containers and a colour code for bin lids. Inverell Council should ensure arrangement to procure new bins comply with these standards.

The only obvious difference will be the colour of the residual (garbage) bin lid which should change from green to red; the current yellow recycling bin lid is compliant. Should Council introduce an organics service in the future the bin lid would be lime green.

7.4 Waste Bin Size

Many Councils have taken the opportunity with a new waste collection contract to reduce the size of the residual or garbage bin to 120 or 140 lit, half the size of the current 240 lit bin used by Inverell Council. Neighbouring Glenn Innes Council is a local example of a Council that has reduced the size of it's standard residual waste bin. The purpose of a reduction in bin size is to motivate householders to be better waste managers, sort their recyclables and compost their organic waste. The concern with a standard 140 lit bin is that residents with excess waste may be tempted to contaminate the recycling service. Providing householders with an organics collection service would help minimise this potential however the concern remains.

A number of Councils have also introduced systems where residents have the option of an 80 lit, 140 lit or 240 lit residual waste bin with a differential charge applied based on the size of the bin. This appears to be a reasonably equitable system, however it does come at an extra cost and an ongoing administration burden. Byron Shire Council recently introduced this system with 82% of households taking up the 140 lit option, 7% the 80 lit option and 11% the 240 lit option. Based on this take up scenario, it hardly seams worthwhile making the three options available with the ongoing administration.

A 1998 study by Grafton City Council found that there was a minor correlation between the size of the waste bin and the quantity of residual waste presented by the householder for collection. However it was not significant and it was considered that providing comprehensive recycling and organics collections systems along with appropriate education was more important to achieving waste reduction goals.

Further insight into the relevance of bin size to the quantity of residual waste presented for collection can be gained from the domestic waste composition audit undertaken by the North East Waste Forum on behalf of north coast member Councils. The results of the audit (refer table 7.2) found very little difference between the composition of the average Clarence Valley 240 lit residual waste bin to the Byron predominantly (85%), 140 lit residual waste bin. The main difference being a higher garden organic component in the Byron bins. In Clarence a garden organics collection service is provided which is not in Byron, which explains the difference. By referring to chart 7.1 it will also be noted that the majority of the smaller Byron bins were 75% or more full, this compares with the larger Clarence bins which were mostly less than 50% full.

Table 7.2: Domestic Waste Stream Comparison Byron Shire and Clarence Valley Council

Material	Byron - kgs / Dwelling	Clarence - kgs / Dwelling
Glass	0.65	0.65
Other Recyclable Containers	0.54	0.44
Paper and Cardboard	1.37	1.64
Plastic Film and Bags	0.54	0.42
Other Non-Recyclable Plastics	0.33	0.45
Food	3.38	3.06
Garden Organics	2.00	0.76
Nappies	0.49	0.51
Other	1.89	1.91
Total	**11.2**	**9.8**

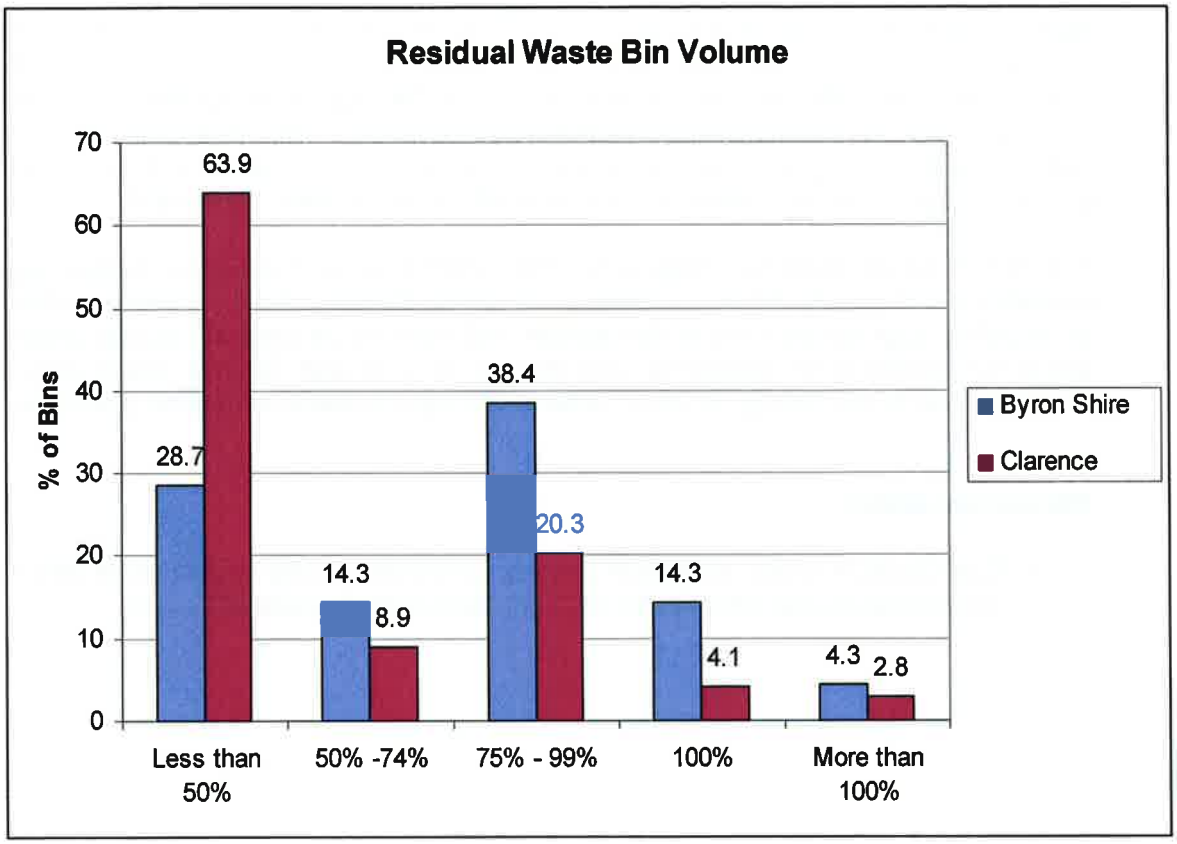


Chart 7.1

From the above it would appear that a smaller 140 lit bin would be adequate for the vast majority of householders; however there is no compelling evidence to suggest that by reducing the size of the residual waste bin, there will be a significant reduction in the quantity of residual waste presented for collection.

The DECCW guideline, Preferred Resource Recovery Practices by Local Government recommends that the standard residual waste bin should be 140 lit or less. Should Council decide to reduce the size of the residual waste bin with the next collection contract, the current 240 lit residual waste bin with the green lid could be utilised for an organics collection bin.

Recommendations

1. *That all mobile waste bins comply with the Australian Standard 4123.*
2. *That waste bin lids comply with the standard colour code, being red for residual bins, yellow for recycling bins and lime green for organics bins.*
3. *That the domestic waste collection service be extended to the areas outlined in table 7.1.*
4. *That Council investigate in detail the opportunities for the introduction of a kerbside organics collection service as part of the tender for next waste collection contract due in 2012.*
5. *That the residual waste bin be reduced to a 140 lit bin under the next waste collection contract, with the existing residual waste bin converted to the organics collection bin.*

8. Commercial Waste Management

Both Council and the private sector are involved in providing waste collection services to commercial and industrial premises. For residual waste, business has the choice of utilising the Councils pre-paid bi weekly 240 lit bin collection system or larger waste collection options available from commercial operators. Blue Gem Contractors make available 240 lit recycling bins for business at commercial rates and Northaven make available large recycling crates for bulk recyclables, particularly cardboard.

The mix of waste collection options for the commercial and industrial sector appears to operating satisfactorily. There is however considerable opportunity to increase the take up of recycling opportunities within this sector. Full cost waste disposal pricing practices will assist by providing an economic incentive to recycle and Council could also play an important role in promoting recycling options through its waste education programs.

Recommendation

1. *That Councils waste education program promotes waste minimisation and recycling opportunities and benefits for the commercial and industrial sectors.*

9. Other Waste Management

9.1 Construction & Demolition Waste

Although Inverell Shire may not have a huge construction and demolition industry it will still generate a significant percentage of the waste going to landfill, approximately 10% would normally be expected. More importantly the sector has great potential to divert a large proportion of its waste away from landfill for beneficial reuse. Material such as brick and concrete, tiles, clean fill, scrap metal, timber, greenwaste, gyprock, cardboard, and domestic recyclables can all be diverted away from landfill for reuse or recycling.

The most effective mechanism to control or influence the construction and demolition industry is to adopt a clearly defined strategy that is multi-faceted and targeted at both the point of generation as well as disposal.

The introduction of a strong education program combined with a differential pricing policy for sorted and unsorted loads delivered to the landfill acts as a strong financial incentive and is a key driver for change. The strategy can be further enhanced by Council using its planning and regulatory powers to include waste management provisions into its DCP's. There are a number of model Waste Not DCP's available including one developed by the DECCW.

Concrete & scrap metal recycling at Inverell Landfill

9.2 Public Place Waste Management

Council currently provide approximately 220 public street and park litter bins which are serviced by Council staff. The number of bins is often supplemented to adequately service special events.

The success of kerbside recycling at home is leading to a strong community expectation to be able to recycle away from home, while at work and at public places and special events. Although the quantity of recyclables may not be high, public place recycling provides a major opportunity to continue the marketing of Councils waste management goals.

Thorough planning and community education is essential for the successful implementation of public place recycling. The DECCW has produced a practice guide for public place recycling which will assist Council develop a system that will meet Councils goals and avoid problems experienced by other Councils when they first introduced public place recycling. The NIRW Group is also undertaking a regional project to develop a public place recycling program that can be standardised throughout the region.

It is recommended that initially the central business areas of Inverell and the key parks and sporting venues be targeted for the introduction of public place recycling. Although this may not be given the highest of priority, it is an important issue that warrants serious consideration by Council.

Public place waste station

9.3 Electronic Waste, E-Waste

The NSW government in their 2005/06 priority statement included e-waste as a waste of concern and is investigating opportunities to introduce extended producer responsibility schemes. The State however has been slow to act and appears reluctant to use its powers to force the introduction of extended producer responsibility schemes. The Federal Government however does appear to have come to an agreement with the States to introduce an industry recycling scheme for computers and TV's. Approval for the scheme was announced in November 2009, however it is not expected that the scheme will be operational in regional areas for some years.

In the mean time, Local Government is faced with a growing e-waste disposal problem. Although Inverell Council has very little data on the quantity of electronic waste being landfilled annually, a 2005 national survey found that in NSW 70% of households have at least 1 computer and 2.3 televisions. Based on this data there is likely to be 14,000 television and 6,000 computers in homes in the Inverell Shire. When this is added to the various other electronic equipment we have in our homes and commercial premises, e-waste is a significant issue. The move to digital and larger televisions is also likely to add further to the problem over the next few years.

Although e-waste is a major issue for the future management of waste in Inverell Council it is difficult to recommend a strategy until the details of the Federal scheme is known. It is appropriate therefore for Inverell Council to monitor developments and to assist the implementation of an industry scheme as it is rolled out.

9.4 Council as a Leader

Council has an obligation under the Local Government Act to deliver domestic waste management services, however the community expects more of its Council than just the delivery of basic services, it expects Council to be a leader. A leader that doesn't just tell others how to act, but leads by example and embraces sustainable waste management practices throughout its organisation.

This will require Council to review all of its activities to look for ways to minimise waste and maximise diversion from landfill. This may involve ensuring all Council buildings are provided with recycling systems not just standard items but also ink cartridges, batteries, mobile phones, and e-waste. Council should be closing the loop by using recycled printing paper and printing double sided. Council is a major purchaser of goods and services; however it has no policy that guides sustainable procurement. It is recommended that

Council develop a sustainable procurement policy to not only ensure whole of life costs and waste management issues are taken into account when purchasing but to also demonstrate to suppliers of goods and services that Council is committed to sustainability purchasing.

Recommendations

1. *That Council develop waste not provisions to be included in DCP's and include a notation or condition on all Development Approvals requiring source separation of waste on all building and demolition sites.*
2. *That Council introduce differential waste disposal fees for sorted and unsorted loads and offer a significant price variation to create the desired motivation for source-separation.*
3. *That Council ensure landfill management practices are effective in diverting sorted waste to beneficial reuse or recycling.*
4. *That Council directly engage with major building and demolition contractors to provide the necessary education and information to promote waste minimisation and source separation.*
5. *That Council develop and implement a public place recycling system for the central business areas of Inverell and key parks and sporting venues.*
6. *That Council monitor developments with the proposed industry e-waste recycling scheme and to assist with the scheme as it is rolled out.*
7. *That Council develop a sustainable procurement policy.*
8. *That a review of Council activities is undertaken to identify ways to minimise waste and increase reuse and recycling.*

10. Residual Waste Disposal

10.1 Inverell Landfill

The Inverell landfill is the main waste management facility in the Council area. It has been serving the population of Inverell (currently approx 12,000) as a waste facility since about 1963 and is anticipated to continue at least until 2039. The 21.04 hectare site is licensed (No.7463) by the NSW Department of Environment, Climate Change and Water, to accept up to 15,000 tonnes of solid waste per year.

The landfill is conveniently located adjacent to the Councils works depot, approximately 3.4km north east of the Inverell Post Office on Burtenshaw Road. The operation and management of the landfill is provided under a new 5 year contract by Blue Gem Contractors.

Inverell Landfill Entry

The Inverell landfill is an extremely valuable community asset and every effort must be made to optimise the landfill space available by efficient landfill practices including proper compaction and effective resources recovery. A positive step in this regard has been the purchase of adjoining land. Although the land will not be used for landfilling, it will provide an additional buffer and space to site infrastructure such as leachate dams which will enable the maximum use of the existing site for landfilling purposes. It is anticipated that with detailed planning and waste minimisation the life of the landfill could be extended well past the predicted life expectancy of 2039.

Council currently has consultants preparing a new Landfill Environmental Management Plan (LEMP) that should address and recommend management practices that will ensure the site conforms to all environmental and licensing requirements; however Council does not have a detailed strategy on how the site can most efficiently be developed while also ensuring that the site can meet environmental and regulatory requirements. Such a strategy with detailed design plans is critical to ensure Council has appropriate financial planning in place to meet future development costs.

As mentioned previously the current quantity of waste being landfilled is unknown, with estimates ranging from 13,000 to 18,000 tonnes per year. With the possibility of waste from the rural landfills being transferred to the Inverell landfill there is the likelihood that the licence limit of 15,000 tonnes will be exceeded. It would therefore be prudent for Council to initiate an amendment to the licence to allow the acceptance of up to 25,000 tonnes per year.

<u>Waste Diversion</u>

Many of the initiatives that aim to divert waste away from landfill such as encouraging source separation, financial incentives, recycling and education are detailed elsewhere in

this strategy; however there will always be opportunities to recover resources from the waste delivered to the landfill. Council must ensure that the landfill operator has the staff, equipment and incentive to screen and recover resources.

Full Cost Accounting

In association with the NIRW group Inverell Council engaged Impact Environmental to undertake a Full Cost Accounting (FCA) exercise on the Inverell Landfill in an effort to find the current cost of providing waste disposal services and to convert the annual cost to a cost per tonne.

The introduction to the Impact Environmental report outlines the benefits of FCA as follows: "By considering the direct and indirect operating costs as well as past and future outlays, full cost accounting enables decision makers to identify all monetary costs of the resources devoted to operating the landfill. Having an estimate of the full cost of providing the Inverell waste disposal facility to the community is a crucial first step in adopting a user-pays policy for waste disposal, in which the generators of waste today pay the full long term costs of disposal. This intergenerational equity is one of the cornerstone principles of sustainable resource management."

Some caution needs to be applied to the cost per tonne detailed in the Impact Environmental Report as it relies on data that could prove highly inaccurate. Without a weighbridge at the Inverell Landfill, Council estimated that 18,000 tonnes of waste was being received at the landfill and this formed the bases of the report. Based on NSW waste generation averages as reported by DECCW, the Inverell landfill would more likely be receiving less than 15,000 tonnes per year. In addition to the uncertainty with waste quantities, Council has recently let a new management contract for the Inverell Landfill which has resulted in a significant increase in operating expenses that were used in the report.

The following table 10.1 is a summary of the annual costs and costs per tonne as determined by Impact Environmental adjusted to reflect the new operating contract. An additional column has also been included to indicate the cost per tonne based on the landfill receiving 15,000 tonnes per annum. These costs will provide the baseline data for determining future waste disposal charges at the Inverell landfill. It is recommended however that a review be undertaken when sufficient data is available after the installation of a landfill weighbridge.

Council should also consider the extent of responsibility the current generation should bear to fund the establishment of a future waste disposal facility. It may be reasonable that future generations should be responsible for a 25% contribution to future establishment costs. The Impact Environmental report is base on the current generation bearing 100% future costs.

Table 10.1: Full Cost Accounting Inverell Landfill

Expenditure Item	Annual Cost	Cost/Tonne 18,000 tonnes	Cost/Tonne 15,000 tonnes
Establishment	$2,194	$0.12	$0.15
Operating	$519808	$28.88	$34.65
Future	$100,000	$5.56	$6.67
Closure and Rehabilitation ($3,000,000)	$67,767	$3.88	$4.52
Replacement Costs ($10,000,000)	$232,558	$12.92	$15.50
Total	**$814,464**	**$51.36**	**$61.14**
Plus 15% Externality Fee	$936,634	$59.06	$70.31

Note: Cost per tonne GST exclusive

Facility Improvements

Landfill Weighbridge:
One of the key requirements for good waste management is quality data. Currently landfill data is based on volume estimates which are likely to be highly inaccurate. There is also very little if any data available on the different waste streams that are being received at the site. Council has committed to funding the installation of a new weighbridge and this should be undertaken as a matter of high priority.

Apart from providing the data to enable Council to make informed decisions the weighbridge will also enable Council to introduce a waste disposal fee structure that reflects the true cost of waste disposal. In addition the weighbridge will eliminate any guess work from determining disposal fees and therefore removes the potential conflict with clients about how much waste is on board and what the true disposal fee should be.

Household Hazardous Waste Store:
Households collect a range of unwanted and often unknown hazardous chemicals, herbicides, pesticides and other substances that are potentially dangerous to health and detrimental to the environment. Inverell Council conducts an annual household chemical collection day, however this does not cater to those that wish to surrender chemicals throughout the year or to chemicals that may be recovered from the landfill or future transfer stations.

Purpose built fully enclosed and ventilated hazardous storage containers are available for the storage of chemicals for under $10,000. Clarence Valley and Lismore Councils have also developed purpose built storage sheds for the short term storage of household hazardous waste; these are more expensive but provide greater capacity and flexibility. It is recommended that a household hazardous waste store be developed at the Inverell landfill. Approval from DECCW would be required and staff will need to be trained on the safe handling of hazardous waste.

Household Hazardous Waste Store

Revolve Centre:
Tip shops or revolve centres have proved highly successful at many waste facilities. They provide employment opportunities, community access to relatively cheap second hand goods, reduce waste to landfill and of course provides an additional income source for the landfill operator.

It is recommended that Council encourage and assist the Inverell landfill operator or other organisation to establish a revolve centre at the Inverell landfill.

10.2 Rural Landfills

Inverell Council operates 12 small rural landfills and it is fair to say that although they may be providing a cheap and convenient waste disposal option for rural residences, the management of the landfills leaves a lot to be desired and imposes considerable financial and environmental risk for Council. The Department of Environment, Climate Change and Water (DECCW) in correspondence dated 30 June 2009 has made it clear that current management practices are not appropriate and urgent change is necessary. The DECCW found that the rural landfill operations pose potential pollution risks to water (ground & surface), air, land, and community amenity and as such they can present Council with a significant environmental liability and financial burden.

Waste exposed to the environment at a rural landfill

Rural landfill after a fire

The environmental and financial risk of having unsecured, unsupervised and poorly maintained landfills is substantial and must be a major focus of this strategy. As detailed in Annexure 1.0 the rural landfills are all of a similar standard and have similar risk issues. To assist local government to determine the risk factors associated with small scale landfills the DECCW has produced a risk profile data base known as E-Ramp. Chart 10.1 graphically highlights the major risks associated with the rural landfill sites, which again highlights concerns with surface and groundwater contamination, fire and conservation issues.

Rural landfills Risk Factors

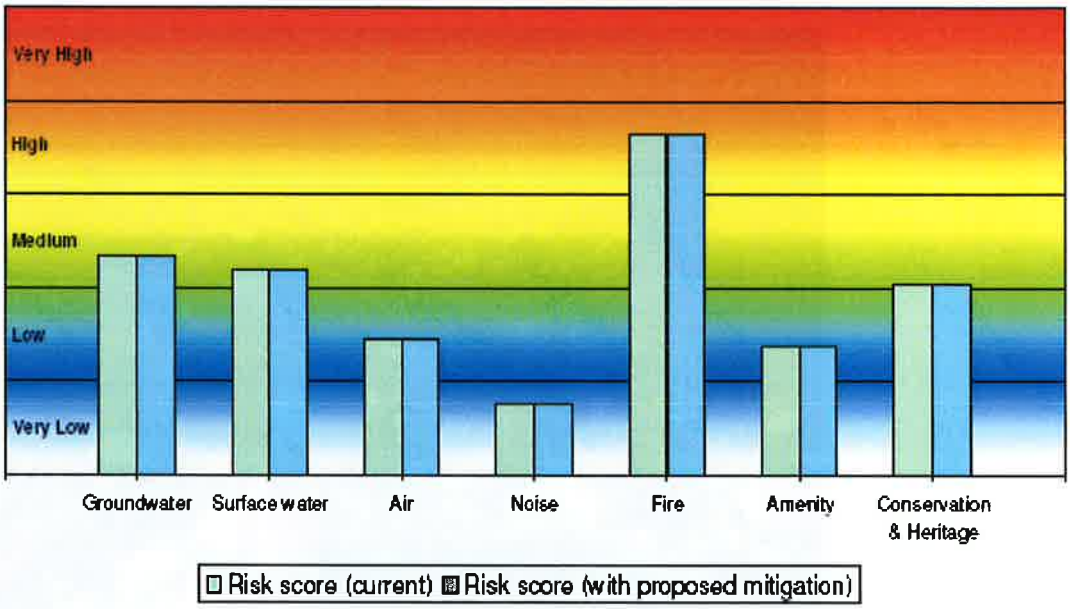


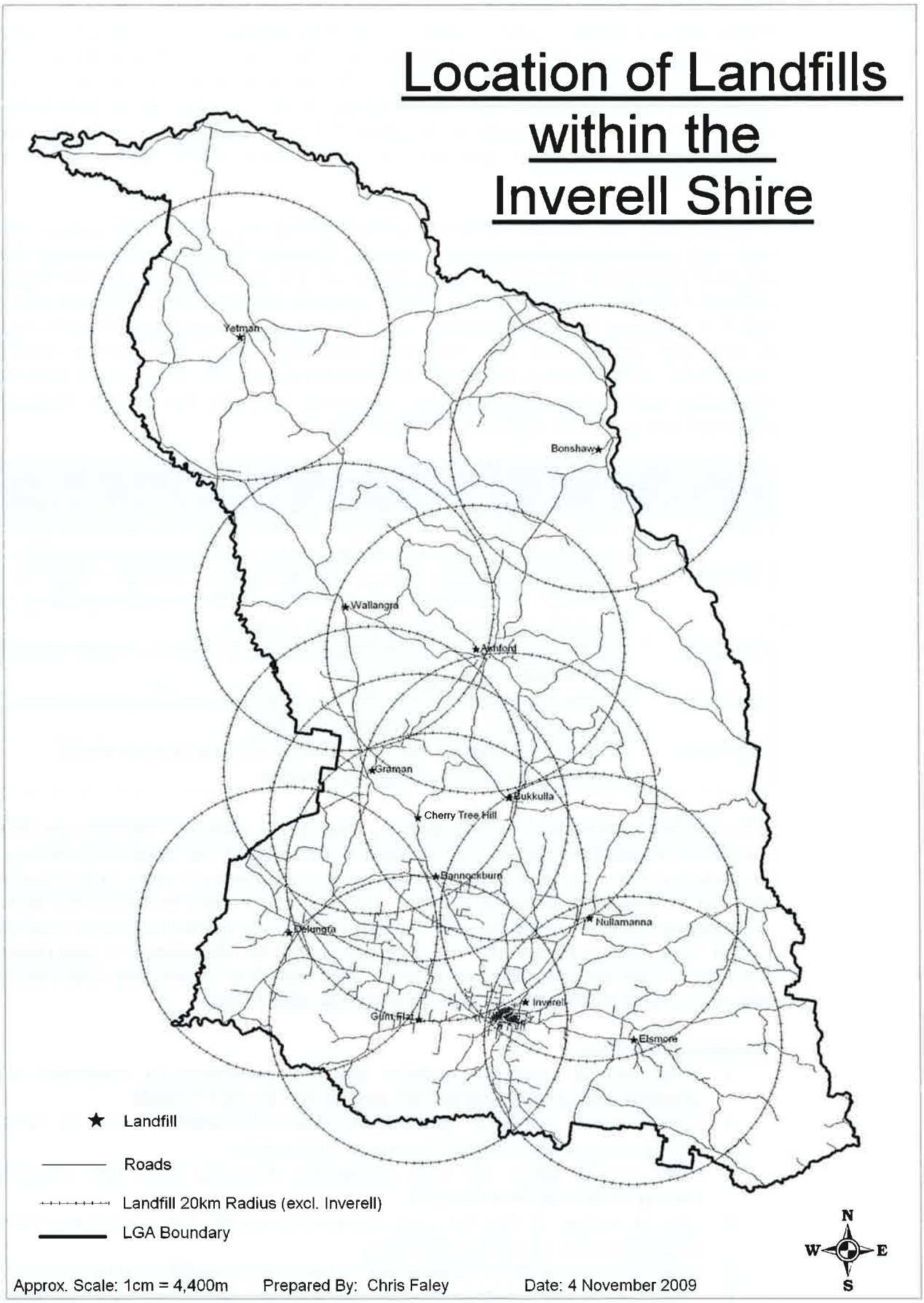
Chart 10.1

Illegal dumping of tyres at a rural landfill

Valuable resources wasted at a rural landfill

Location of Rural Landfills

The location of the existing rural landfills and the Inverell landfill is depicted in Figure 10.2. It is reasonably clear that many of the landfills are in close proximity to one or more other sites. It therefore appears appropriate that as a first step Council should consider rationalising the number of rural landfills and then consider how to better manage any remaining sites.


Location of Landfills within the Inverell Shire
Yetman
Bonshaw
Wallangra
Ashford
Graman
Bukkulla
Cherry Tree Hill
Bannockburn
Nullamanna
Delungra
Inverell
Gum Flat
Elsmore
Landfill
Roads
Landfill 20km Radius (excl. Inverell)
LGA Boundary
N
W
E
S
Approx. Scale: 1cm = 4,400m
Prepared By: Chris Faley
Date: 4 November 2009

Rationalising Rural Landfills

Proposals to rationalise and or improve the management of rural landfills must consider the economic, environmental and social impacts of the proposed actions. A number of issues were considered when reviewing the medium-term viability of a rural landfill, however a key criteria was that a waste disposal site should be accessible within an easy 30 minute drive (approx maximum distance of 35km). Consideration was also given to the recommendation outlined in section 7.1 to expand the kerbside waste collection service to rural areas.

It is proposed that Inverell Shire can be adequately serviced by the Inverell Landfill and four rural waste disposal sites being Ashford, Boshaw, Yetman and Delungra. Maintaining the four rural waste disposal sites is based on the considered excessive distance to an alternate waste disposal site. To further mitigate potential environmental and economic risk it is proposed that the above four sites be converted into waste transfer stations over a five year period and that restricted operating hours and on-site supervision be introduced. The following table 10.2 establishes a five year program for rationalising and improving rural waste disposal sites, annexure 3 details the budget implications both recurrent and capital to implement the program.

Table 10.2: Program for Rationalising & Improving Rural Waste Disposal Sites	
Year	**Actions**
2010/11	Close & rehabilitate Wallangra, Graman, Elsmore, Bukkulla and Gum Flat rural landfills. Improve maintenance of remaining seven landfills.
2011/12	Close & rehabilitate Oakwood, Nullamanna and Cherry Tree Hill rural landfills. Secure remaining four rural landfills, restrict operating hours, provide supervision and disposal charges.
2012/13	Close & rehabilitate Ashford landfill and construct a waste transfer station with recycling facilities.
2013/14	Close & rehabilitate Bonshaw and Yetman landfills and construct waste transfer stations with recycling facilities.
2014/15	Close & rehabilitate Delungra landfill and construct a waste transfer station and recycling facilities.

The proposed rationalisation program may need to be reviewed following the finalisation of the CPRS legislation. Should the Inverell Landfill exceed the adopted proximity threshold for inclusion into the CPRS, transferring waste from the rural sites to the Inverell Landfill will add an additional financial burden. Council would need to review the environmental and financial risks of operating rural landfills against the added economic cost imposed by CPRS. This does not mean that the program should be abandoned; it may however mean a sharper focus and additional resources being provided to practices that minimise waste and diverts waste away from landfill to other beneficial uses.

Recommendations

1. *That Council engage a suitably qualified consultant to undertake a long-term strategic design and operational plan for the Inverell Landfill.*
2. *That Council apply to amend the Inverell landfill licence to authorise the acceptance of up to 25,000 tonnes of solid waste.*
3. *That Council adopt full cost accounting including externality provisions when setting waste disposal charges.*
4. *That a review of the full cost accounting results be undertaken following the installation of a landfill weighbridge.*
5. *That a weigh bridge be established at the Inverell landfill as a high priority.*
6. *That a household hazardous waste store be established at the Inverell landfill.*
7. *That a revolve centre be established at the Inverell landfill.*
8. *That the rural landfill sites be rationalised and improved as detailed in table 10.2.*

11. Materials Recovery Facility

The Inverell Materials Recovery Facility (MRF) is conveniently located adjoining the Inverell landfill. A new three year management contract has recently been finalised with the incumbent contractor Northaven Pty Ltd. Although the facility is labour intensive it is capable of effectively processing the current quantity of material with capacity to process considerable more. The labour intensive aspect is not an issue for Northaven as its primary role is to provide employment and training opportunities for people with disabilities. Normally there is around 16 staff engaged at the MRF making it an important business for Northaven.

The most pressing structural issue at the MRF is the front end materials unloading area. Council is in the process of undertaking a major upgrade which should eliminate the issues with the current arrangement. Council will need to continually invest in maintenance and improvements to ensure that the facility is capable of safely and effectively meeting the recycling needs of the Shire.

1. *That Council develop a continuous improvement and preventative maintenance program for the Inverell MRF.*

12. Waste Education

An ongoing challenge for Council is to know how to best communicate with its community and visitors about the waste management system with limited resources. Residents and visitors need to know what is expected from them, both on a broad community and on a local household and individual level. The community education and communications programs need to encourage the community to participate in waste avoidance, reuse and recycling initiatives as part of the waste minimisation and management programmes.

A comprehensive waste education program including dedicated staff may be beyond the resource available to Inverell Council at this time, however if Council is going to meet its waste management goals it will need to provide additional resources for waste education. This could start by establishing a set percentage of the domestic waste charge that will be dedicated to waste education, at just 2%; $22,000 could be dedicated to waste education. This would more than double the current commitment of $10,000 pa.

If additional resources are provided it is essential that Council develop a waste education plan to ensure programmes are well targeted and cost effective. Council should also look to regional cooperation to achieve greater value from the resources available. Education programs jointly delivered with neighbouring Councils and with the Northern Inland Regional Waste Group should be pursued as part of the plan.

It is important to develop a consistent branding for all waste education and promotion material. This should apply to brochures, stickers, signage, paid advertisements and waste collection trucks.

Recommendations:

1. *That approximately 2% of the domestic waste charge be dedicated to waste education.*
2. *That an education plan be developed to ensure effective use of available resources.*
3. *That a consistent waste management branding be developed and that this be applied to all waste promotional material and collection trucks.*

13. Alternate Waste Technologies – AWT's

With increasing environmental concern and the difficulty of locating new landfill disposal sites, particularly in metropolitan areas, there has been a growing interest in the establishment of alternate technologies to landfill for solid waste disposal. The NSW Government is actively encouraging the use of alternate technologies to help achieve it waste diversion targets.

There are a number of alternate technologies that are available, overseas many of these are well established and mature technologies. In Australia there have also been a number of facilities established over the past ten to fifteen years. It is perhaps fair to say that the results have been mixed both financially and in performance. It can be expected however, that AWT's will improve and will become more financially viable in the future.

In the regional setting there are three AWT's in operation, the vermicomposting (worms) facility in Lismore which is processing approximately 6000 tonnes of source separated organic material into compost/soil conditioner products. The Remondis facility in Port Macquarie uses in-vessel accelerated composting to process organics, while mixed solid waste undergoes an aerated static pile process to stabilise the material for use as landfill cover. The facility aims to divert 60% of its waste stream away from landfill.

Coffs Harbour, Nambucca and Bellingen Councils have jointly developed an AWT to process solid mixed and organic waste from the three Council areas. The bio-mass facility uses an agitated bay fully enclosed system to produce high quality compost from the organics waste stream with mixed waste going through a refining and autoclaving process to recover material of beneficial reuse. The aim is to divert up to 85% of domestic waste from landfill with the remaining being rendered inert by the autoclave process prior to landfill.

Some of the perceived benefits of AWT's include:-

- Greater resource diversion
- Less environmental impact
- Can be established close to the service population

Alternate technologies however come at a significantly greater financial cost and risk due to the need for long-term contractual arrangements.

The opportunity for the Inverell Council to embrace AWT in the short term is limited. A population in excess of 200,000 would be necessary to support an AWT. There may however be opportunities with emerging technologies or as existing technologies mature. There may also be potential in the future to develop a regional AWT based on the NIRW group of Councils.

Acknowledging that AWT's can achieve improved environmental outcomes compared to traditional landfills and that Inverell is unlikely to be in a position to adopt AWT in the near future, Council should explore and implement measures that will minimize and/or offset the environmental impact of the Inverell landfill and waste services generally. Potentially a $1 spend on neutralising landfill impacts may be far more effective than spending a $1 on an AWT.

Council can use the cost advantage of operating the Inverell landfill compared to an AWT, to invest in both on and off site measures that will offset environmental impacts. This type of program has the potential to achieve greater environmental benefit than conversion to AWT.

Recommendations

1. *That Council continue to monitor developments with alternate waste technology.*

14. Waste Management Funding

14.1 Background to Waste Charges and Levies

The term 'polluter pays' is critical to the consideration and understanding of waste management charges. Generators of waste should pay for the full costs of dealing with that waste. This is considered the fairest way to distribute the costs of waste management among the present generation. This is the principle of intra-generational equity. It is also the fairest way of distributing the costs of waste management between the present and future generations (i.e. by not leaving a cost burden to future generations), in accordance with the principle of inter-generational equity.

The polluter pays principle also provides the incentive for waste generators to reduce waste generated, if the true costs of waste management are passed on to them. This is not always practical for technical and economic reasons, but the principle underpins most considerations of the issue of apportioning waste management costs.

For these reasons and also to avoid future 'unfunded liabilities' associated with environmental and social impacts relating to waste disposal facilities, it will become increasingly important to know the true cost of waste services. Inverell Council has found that the cost of waste disposal at Inverell landfill is at least $59 per tonne (refer section 10.1).

Domestic Waste Management (DWM)

Domestic Waste Management refers to services comprising the periodic collection of domestic waste from individual parcels of rateable land and other related services. Domestic waste management may include kerbside collected recycling, garbage and organics and annual domestic clean-up services, and the related use of a disposal or processing sites. Other waste services not related to domestic kerbside collected services such as litter collection and rural landfills can not be associated with domestic waste management.

Reasonable Costs in Providing Domestic Waste Management Services

Auditors are charged with the responsibility of determining along with other annual financial accounts, that Council in making and expending annual DWM service charges appropriately and that Council has met the reasonable cost criteria established by the state government.

What is 'reasonable' is also a matter to be judged by the local community in their assessment of Council's Management Plan as to what should be included and costed in the provision of domestic waste management services.

The Local Government Act DWM provisions are intended to ensure that residents are only charged on the basis of reasonable costs associated with the provision of domestic waste management services. The Department of Local Government indicates that the concept of reasonable cost "is in keeping with the principle that all costs, which can be reliably measured and reasonably associated with providing a DWM service, should be included in determining the charge for the service" (DLG 2002).

Department of Local Government Policy and Guidance Concerning DWM
The Department of Local Government has developed a policy statement in relation DWM service provision that is intended to further assist councils to make 'correct' interpretations, consisting of the following key points:

- An annual charge for domestic waste management (DWM) services must be made for each parcel of rateable land for which the service is available.
- The DWM charge is to be based on the cost of providing the service and must not be directly funded from ordinary rates.
- Determination of the DWM charge must consist of all reasonable costs in providing the service. Reasonable costs can include operating costs and capital costs, which can be reliably charged to the period.
- All revenues applicable to the DWM service must be restricted to the DWM activity.
- All revenues and expenditures applicable to the DWM service must be accounted for as a distinct activity from any trade waste or other garbage activity.
- Any surplus or deficit derived as a result of providing the DWM service for a period must be maintained in the DWM activity, and in the case of a surplus the cash component held as a restricted asset.
- Records which are used to substantiate reasonable cost that are maintained outside AAS 27 financial reporting requirements must be reflected in the management plan. Internal costing of the DWM service should be based on a management accounting approach.
- Where a Council includes a provision for future asset replacement in its calculation of "reasonable cost", the amount, purpose and expected expenditure of those funds must be reflected in the management plan.

Long term Cost Inclusion
Where longer term costs are being considered, cost recovery should be phased in over a gradual period. Gradualisation in adjustments to reasonable cost is preferred to sudden, material shifts in reasonable cost. Reasonable cost should not be event focused on one individual year. The equalisation of revenues with a reasonable cost of service delivery can be assumed to cover a flexible time over a number of financial years. For example, the capitalisation and depreciation (for management accounting purposes) of a landfill sites rehabilitation costs and interest expense on land acquisition should be determined as costs over the term of the life of the waste site. Capital equipment or facilities, shared for the exclusive use of DWM, must also be part of reasonable cost of service delivery through tier depreciation expense.

Accumulated Surplus
An accumulated surplus for DWM should lead to a reduction in the appropriate charge(s), over time, unless it is planned to absorb the surplus through anticipated higher service delivery costs in future years, or planned future capital cost such as a new MRF or new bins.

14.2 Annual Waste Management Budget

The current waste management budget is contained within the one cost centre. This does not strictly comply with the Departments guideline and results in a mixture of both Domestic and Non Domestic waste income and expenditure being reported in the one cost centre.

To improve transparency and to facilitate compliance with reasonable costs guidelines, it is recommended that two cost centres be established, one for domestic waste and the second for all other waste management. Annexure 4, provides an indication of how the Waste Management Budget would appear should two cost centres be established.

14.3 Domestic Waste Management Charge

All Councils must levy an annual charge for DWM services provided pursuant to Section 496 of the Local Government Act. In terms of making the charge a user pays charge, it is entirely within the discretion of Council to differentiate the levels of such charges on the basis of volume or level of the domestic service.

In terms of waste and recycling services, it is within Council's power to set either a single annual domestic waste management service charge, which represents both a contribution to recycling activities and waste disposal costs or, instead, to set a single charge that separately incorporates both a Domestic Waste Recycling component and a Domestic Waste Management Service component.

For vacant parcels of land in areas which have access to a kerbside domestic waste service, a DWM charge also under Section 496 must be levied. This charge should reasonably reflect the cost of establishing and administering waste collection contracts but would not normally include any contribution to actual collection or disposal expenses.

In most cases all rateable parcels with a dwelling, occupied or not, within a waste collection area or fronting a rural route of travel road, are levied a domestic waste management charge. To ensure that the waste collection service is delivered cost effectively and administratively efficient and equitable, it is essential that exemptions to this policy are limited to properties that can demonstrate exceptional circumstances, for example, where there is an excessive distance from the dwelling to the service road.

The charge may typically cover short term, recurrent and operational costs of waste management, longer term capital costs, anticipated material shifts in out-sourcing costs or future replacement costs. The DWM charge may include provisions for future events that are planned but which are not current legal commitments.

Proposed Annual Domestic Waste Management Charge

The annual domestic waste management charge is set annually by Council as part of its annual management plan. The following table 14.1 has been developed as a guide to the establishment of the reasonable cost of providing domestic waste services and an indication of what the DWM charge may be over the next four years. It should be noted that this table is based on estimates only and the new waste collection contract in 2012 and decisions on providing organic services will have a significant impact on costs.

Table 14.1: Draft Domestic Waste Management Calculation

Cost Item	2009/10	2010/11	2011/12	2012/13	2013/14
Administration	$45.62	$45.00	$48.00	$49.00	$51.00
Waste Education	$2.00	$4.50	$4.60	$4.70	$4.80
Waste Collection	$27.68	$30.00	$31.00	$40.00	$41.20
Waste Disposal	$70.07	$107.00	$72.00	$58.00	$60.00
Recycling Collection	$13.84	$15.00	$15.50	$20.00	$21.00
Recycling Processing	$29.71	$25.00	$25.50	$26.50	$27.00
Organics Collection	$0.00	$0.00	$0.00	$25.00	$25.50
Organics Processing	$0.00	$0.00	$0.00	$30.00	$31.00
Bin Replacement	$1.30	$1.50	$2.00	$2.50	$2.50
NIRW Projects	$0	$2.00	$3.00	$3.00	$3.00
Net pensioner rebate cost	$9.57	$9.70	$10.00	$9.50	$9.60
Transfer to from reserve	$28.21	$7.00	$40.00	$2.50	$4.10
Credit Other waste income Including vacant land charges	$0	-$0.70	-$0.70	-$0.70	-$0.70
Annual DWM Charge	**$228.00**	**$246.00**	**$250.00**	**$270.00**	**$280.00**
Annual Vacant DWM Charge	$0	$20	$20	$20	$25

Notes:

- New waste collection contract from 2012/13 likely to increase collection costs above CPI
- Waste disposal costs should reduce following weighbridge introduction and contribution is based on actual tonnage of domestic waste
- Organics services proposed to commence from 2012/13
- Transfers to the domestic waste reserve will generate income to purchase new bins for the organics service. Transfer can then reduce to long term level.

14.4 Waste Management Levy:

In the 2009/10 management plan Council introduced a $32 waste management levy on all rateable properties under Section 501. The levy was introduced to ensure that everyone made an equitable contribution to the cost of developing and operating non domestic waste infrastructure and services such as landfills, transfer stations, litter management etc. Council intends to continue applying a waste management levy and will use the reasonable costs principles to set the value of future levies. It is considered prudent for the levy to increase in 2010/11 to ensure adequate funds are available for the proposed transfer stations and improved service levels. Table 14.2 below provides an indication of how the levy is likely to increase up to 2019/20.

Table 14.2: Draft Waste Management Levy										
09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
$32	$42	$42	$43	$44	$45	$46	$47	$48	$49	$50

14.5 Waste Disposal Pricing

Pricing Principles

The chief concerns with the pricing of waste is that the system used achieves the recovery of costs associated with providing waste services, and that it also sends the right signals to waste generators in terms of rewarding the minimisation of amounts of waste requiring disposal to landfill.

The issue of the 'true costs' of disposal of waste is therefore critical, as it is the bottom line figure for the operation of a landfill that chiefly determines the cost per tonne of waste disposal. This in turn affects waste disposal charges at waste facilities, both for the domestic waste collection service already mentioned, and other users including the Council (i.e. ratepayers) in providing general waste services such as street bin collection for the broader community.

Most landfills attempt to recover the 'direct' costs associated with disposal to landfill, however, there are a range of 'indirect' or hidden costs that should be considered if long term environmental health, social well-being and future waste disposal options are not all left to be funded by future generations. This is the principle of inter-generational equity.

All costs that are not currently included by Councils in weighing up how much to charge for landfill disposal are 'external' to the accounting system and are known as 'externalities'. In relation to landfill, these might typically include costing site disamenity for neighbouring residents, greenhouse gas emissions from landfill, the risk of groundwater and surface water contamination and impacts on flora and fauna.

In addition, advocates of the use of full cost accounting for waste management have focused beyond typical landfill externalities to consider externalities associated with waste collection and transport as well. For example, what are the costs associated with vehicle pollution and accidents due to the existence of waste collection systems?

The concept of triple bottom line accounting has emerged in recent years to address social and environmental bottom lines in addition to the economic bottom lines. In the case of landfill disposal, a first step in the implementation of triple bottom line accounting is therefore to acknowledge that there may be additional costs to consider. The second step is to seek to internalise these 'externalities'.

Knowing the 'true cost' of waste disposal in turn should affect the level of charges for use of waste disposal facilities.

Ideally, a user pays charging structure for waste disposal should be used primarily because this is a key factor underpinning the broader aim of reducing waste generated. That is, the more it costs to dispose of waste to landfill, the more likely users are to seek to minimise the amount generated, assuming accessible alternatives and incentives to do so are made available, and that there are strong enough punishments for illegal waste dumping.

The provision of separate bins, materials recovery facilities, and/or the availability of drop off centres/transfer stations and buy-back shops for recoverable resources are all examples of the alternatives used to assist waste generators to minimise what they send to landfill. Incentives such as tiered or differential charging for different waste types are also employed in an effort to send the right 'pricing signals' to waste generators to maximise their resource recovery efforts and to minimise their non-recoverable waste generation.

Annexure 2 details the pricing principles recommended by the Independent Pricing and Regulatory Tribunal in 1996 that are reflected in the proposed waste disposal charges.

Incorporation of External Costs

As outlined above external costs are those often intangible costs typically borne by the environment and by those living nearest to waste disposal facilities. For waste management prices to fully reflect true costs, they should also incorporate all the indirect or 'external' environmental and other social costs of such activities.

There does not appear to be any definitive study into the cost of externalities associated to landfills in Australia. A, Nolan – ITU 2001 study into recycling estimated the unpriced externalities of landfill at $200-$280 per tonne. A more recent report by the Federal Governments Productivity Commission rejected this estimate and made its own estimate at a much lower rate of between $5 and $24 (refer table 14.3).

While numerous examples of external costs may be able to be listed, quantifying them is obviously difficult and can be controversial. Impact Environmental in their full cost accounting report recommended that a 15% externality charge be applied. Lismore City Council some years ago applied an externality loading of 5% on waste management costs and Clarence Valley Council introduced a $15 per tonne externality loading in 2007/08.

Although the science of pricing externalities may lack certainty, it is considered appropriate to apply the precautionary principle and develop a means of costing externalities even at the lower end. It is considered that an actual dollar figure should be applied rather than a % of total waste cost, as suggested by Impact Environmental as a percentage has no direct relevance to the value of externalities. Table 14.1 below details how the Productivity Commission has costed externalities that apply to a landfills such as the Inverell Landfill. The most significant variable is greenhouse gas, the lower end costs relate to landfills with gas to energy systems in place. The Inverell landfill does not have a gas to energy system so the higher end of the range would apply. An average rate across the waste streams would be approximately $12.00 per tonne.

Table 14.3: Estimate of External Costs of Best Practice Landfill per tonne

	Municipal Waste	C & I Waste	C & D Waste
Leachate	Less than $1	Less than $1	Less than $1
Greenhouse gas	$4 to $15	$5 to $21	$1 to $4
Other gas	Less than $1	Less than $1	Less than $1
Amenity	Less than $1	Less than $1	Less than $1
Total	**$4 to $18**	**$5 to $24**	**$1 to $7**
Mid Range	**$11**	**$15**	**$4**

Source: Waste Management, Productivity Commission Report 2006

In addition to landfill externalities, the waste collection system also has indirect social and environmental cost that should be applied. The New South Wales EPA (1996) estimate for the external cost of waste collection in regional areas was between $1.20 and $1.50 per tonne of waste collected. Applying an average 3% inflation rate, the 2010 cost would be between $1.82 and $2.27.

It is therefore proposed that the waste disposal charges increase generally by $15 per tonne CPI adjusted annually, to account for the external costs of collection and disposal of solid waste. It is also proposed that income generated by the externality charge estimated at $165,000pa, should be restricted to fund projects that have a positive sustainability

impact and therefore neutralize some of the negative social and environmental impacts associated with waste management. For example, funds could be used for energy management projects which would help offset landfill greenhouse gas generation, to construct cycle ways or to rehabilitate rural landfill sites.

Proposed Inverell Waste Disposal Charges

The proposed waste disposal fee structure in table 14.4 will only become operational after the commissioning of a landfill weighbridge. The charges are based on the full cost accounting report by Impact Environmental adjusted for the new landfill operations contract and include a $15 per tonne externality component for waste going to landfill.

To comply with best practice pricing principles and to remove any cross subsidies all waste received at the Inverell landfill should be subject to the applicable disposal charges including domestic waste, Council generated waste and any future transfer station waste. This will ensure that true waste disposal costs are applied to all Council activities and to domestic waste.

Table 14.4: Proposed 2010/11 Waste Disposal Charges	
Waste Category	**$ per tonne GST inc**
Mixed waste	$80
Sorted Mixed Waste, > 25% sorted recyclables	$50
Special or hazardous waste, including asbestos	$130
Greenwaste	$30
Concrete, masonry waste	$30
Clean Fill	$10
Recyclables including scrap metal	$0

14.6 Funds Restricted for the Purpose Of Waste Management (Reserves)

There are currently two waste management reserves held by Council. The garbage depot land purchase reserve and the garbage rehabilitation reserve. The total balance of these reserves as at 30.06.2010 is estimated to be a total of $1,630,000. Council has however committed the expenditure of $604,000 from the reserves for the purchase of land adjoining the Inverell landfill, the installation of a landfill weighbridge and an upgrade to the Inverell recycling centre (MRF). Should all of the committed expenditure occur during the current financial year a balance of $1,026,000 would remain.

In line with the Full Cost Landfill report it is proposed that the two existing reserves be renamed to better reflect their purpose and three new restricted reserves be established to ensure adequate funds are available for the long term management of solid waste. The proposed domestic waste reserve will also ensure any surpluses from domestic waste management charges are restricted for only domestic waste purposes. An example of what the Domestic Waste Reserve could be used for, would be the purchase of new greewaste bins should the service be introduced in 2012/13. Funds left within the two existing reserves after all commitments, should be redistributed generally in line with table 14.5 below.

Table 14.5: Waste Management Reserves		
Reserve	**Purpose**	**Funds as at 30.6.2010**
Domestic Waste Reserve	Funded from any surplus from the domestic waste charge. It is restricted to the funding of future domestic waste budget shortfalls & the development of domestic waste infrastructure.	$0
Waste Infrastructure Augmentation	Restricted to fund improvements to waste infrastructure, including landfills and transfer stations. Annual contribution approx $100,000 adjusted inline with CPI.	$500,000
Inverell Landfill Closure and Rehabilitation	Restricted to fund future landfill closure and rehabilitation costs. Annual contribution approx $60,000 adjusted inline with CPI.	$150,000
Future Solid Waste Disposal Needs	Restricted to fund future landfill replacement costs. Annual contribution approx $175,000 adjusted inline with CPI.	$376,000
Sustainability Externality Reserve	Funded by a $15 charge per tonne (CPI adjusted annually) of waste disposed to landfill. It is restricted to fund projects that mitigate or offset waste management environmental and social impacts.	$0

Recommendations

1. *That a $15 per tonne externality charge be applied to waste disposal charges from 2010/11.*
2. *That income generated by the externality charge be restricted for the purpose of funding projects that will reduce or offset the environmental and social impacts of waste collection and disposal.*
3. *That a review of the full cost accounting results be undertaken following the installation of a landfill weighbridge.*
4. *That the waste management budget be split into two cost centres – Domestic Waste and Other Waste from 2010/11.*
5. *That all waste received at the Inverell Landfill and transfer stations be levied the applicable waste disposal charge including domestic waste, Council generated waste and waste from transfer stations.*
6. *That the domestic waste charge be generally based on table 14.1.*
7. *That restricted waste management reserves be established generally in accordance with table 14.5.*

Section D.
Recommendations

15. Future Actions

The following table details all actions recommended by the waste management strategy. It includes an estimate of the cost of implementing the action, the actions priority and an expected date for completing the actions implementation.

Table 15.1: Recommended Actions

No	Action	Est Cost	Priority	Completion
1	That waste data collection and records be improved by developing a weighbridge at the Inverell landfill.	$250,000	High	30.6.2010
2	That waste data collection and records be improved by receiving quarterly recycling reports from Northaven	$0	High	31.12.2009
3	That a waste characterisation study be undertaken, potential regional project with NIRW group.	$50,000	Medium	31.12.2010
4	That Council continue to actively participate in the NIRW group.	$10,000pa	Medium	On going
5	That Council monitor development with CPRS	$0	Medium	On going
6	That all mobile waste bins comply with the Australian Standard 4123.	$0	Medium	On going
7	That waste bin lids comply with the standard colour code, being red for residual bins, yellow for recycling bins and lime green for organics bins	$0	Medium	On going
8	That the domestic waste collection service be extended to the areas outlined in table 7.1	Cost neutral	High	30.06.2010
9	That Council investigate in detail the opportunities for the introduction of a kerbside organics collection service as part of the tender for next waste collection contract due in 2012	$10,000	Medium	30.06.2011
10	That the residual waste bin be reduced to a 140 lit bin under the next waste collection contract, with the existing residual waste bin converted to the organics collection bin	$50 per bin	Medium	30.06.2012
11	That Councils waste education program promotes waste minimisation and recycling opportunities and benefits for the commercial and industrial sectors	$22000 pa	High	On-going
12	That a consistent waste management branding be developed and that this be applied to all waste promotional material and collection trucks.	$5000	Medium	30.06.2011
13	That Council develop waste not provisions	$2,500	Medium	30.06.2011

	to be included in DCP's and include a notation or condition on all Development Approvals requiring source separation of waste on all building and demolition sites			
14	That Council continue to review differential waste disposal fees for sorted and unsorted loads, offering a significant price variation to create the desired motivation for source-separation	$0	Medium	30.06.2011
15	That Council ensure landfill management practices are effective in diverting sorted waste to beneficial reuse or recycling	$0	High	30.06.2010
16	That Council directly engage with major building and demolition contractors to provide the necessary education and information to promote waste minimisation and source separation	$0	High	On going
17	That Council develop and implement a public place recycling system for the central business areas of Inverell and key parks and sporting venues	$40,000	Medium	30.06.2013
18	That Council monitor developments with the proposed industry e-waste recycling scheme and to assist with the scheme as it is rolled out	$0	Medium	30.06.2012
19	That Council develop a sustainable procurement policy	$0	Medium	On going
20	That a review of Council activities is undertaken to identify ways to minimise waste and increase reuse and recycling	$2,500	Medium	31.12.2010
21	That Council engage a suitably qualified consultant to undertake a long-term strategic design and operational plan for the Inverell landfill site	$20,000	High	30.06.2010
22	That Council apply to amend the Inverell landfill licence to authorise the acceptance of up to 25,000 tonnes of solid waste pa	$0	High	30.06.2010
23	That Council adopt full cost accounting including externality provisions when setting waste disposal charges	$0	High	On going
24	That a review of the full cost accounting results be undertaken following the installation of a landfill weighbridge.	$0	High	30.6.2011
25	That a household hazardous waste store be established at the Inverell landfill	$40,000	High	30.06.2011
26	That a revolve centre be established at the Inverell landfill	$50,000	Medium	30.06.2012
27	That the rural landfill sites be rationalised and improved as detailed in table 10.2.	$809,000	High	30.06.2015
28	That Council develop a continuous improvement and preventative maintenance program for the Inverell MRF	$15,000 pa	High	On going
29	That approximately 2% of the domestic waste charge be dedicated to waste education	$22,000 pa	High	30.06.2010

30	That an education plan be developed to ensure effective use of available resources	$2,500	Medium	30.06.2011
31	That Council continue to monitor developments with alternate waste technology	$0	Medium	On going
32	That an $15 per tonne externality charge be applied to waste disposal charges from 2010/11 and adjusted annually with CPI	$0	High	30.06.2010
33	That Income generated by the externality charge be restricted for the purpose of funding projects that will reduce or offset the environmental and social impacts of waste collection and disposal	$0	High	30.06.2010
34	That all waste received at the Inverell Landfill and transfer stations be levied the applicable waste disposal charge including domestic waste, Council generated waste and waste from transfer stations.	$0	High	30.06.2010
35	That the waste management budget be split into two cost centres – Domestic Waste and Other Waste	$0	High	30.06.2010
36	That restricted waste management reserves be established generally in accordance with table14.5	$0	High	30.06.2010

Section E.
References, Annexure, Tables, Charts & Figures

16. References

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Annexure 1.0: Rural Landfill Sites

Landfill Name	Ashford Landfill
Address	Limestone Road
Distance to Inverell: 57 km	Distance to closest alternate landfill: Bukkula 24 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Permeable soils • Site fenced but not secured, 24 hr access • no leachate management • Maintained by Council twice per week • recycling available, but poorly used • Indiscriminate dumping around site
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Bonshaw Landfill
Address	Campbell Road
Distance to Inverell: 97 km	Distance to closest alternate landfill: Ashford 40km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced but not secured, 24 hr access • No leachate management • Maintained by Council as necessary • Recycling available • Site used by residence living outside of the shire
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Bukkulla Landfill
Address	Ashford Road
Distance to Inverell: 32 km	Distance to closest alternate landfill: Ashford 24km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Close to residential properties • Remaining life about 5 years • Regular fires at the site • Site not fenced, • No leachate management • Maintained on a monthly basis • Recycling available, not utilised
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources

	• Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Cherry Tree Hill Landfill
Address	Ashford Road
Distance to Inverell: 29 km	Distance to closest alternate landfill: Oakwood 9 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Regular fires at the site • Site fenced but not secured, 24 hr access • No leachate management • Maintained on a monthly basis • Recycling available not utilised
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Delungra Landfill
Address	Heywood Road
Distance to Inverell: 36 km	Distance to closest alternate landfill: Inverell 36 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced, fully supervised, open 3 hours 3 days per • No leachate management • Surface water diversion • Maintained on a irregular basis by Council • Recycling available and well utilised
Major risks	• Potential groundwater pollution • Surface water pollution • Vermin & litter • OH & S issues for visitors and staff

Landfill Name	Elsmore Landfill
Address	Elsmore Road
Distance to Inverell: 18km	Distance to closest alternate landfill: Inverell 18km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced with key access, but often left open • Fires occur regularly • No leachate management • Maintained on a monthly basis • Recycling available
Major risks	• Porous granite soils, potential groundwater pollution • Surface water pollution • Litter • Loss of valuable resources • Fire – smoke is a health concern for local resident • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Graman Landfill
Address	Graman Road
Distance to Inverell: 40 km	Distance to closest alternate landfill: Ashford 23 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced but not secured, 24 hr access • Remaining life about 5 years • Fires occur regularly • No leachate management • Maintained by Council as necessary • recycling available, not utilised
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Gum Flat Landfill
Address	Eddy Park Lane
Distance to Inverell: 18km	Distance to closest alternate landfill: Inverell 18km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Old quarry site, porous soils • Site fenced with key access, • No leachate management • Maintained on a monthly basis • Cover material not available from site • Recycling available
Major risks	• Porous granite soils, potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Nullamanna Landfill
Address	Emmaville Road
Distance to Inverell: 17km	Distance to closest alternate landfill: Inverell 17km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced with key access, • No leachate management • Fires occur on a regular basis • Site used by residence from outside of the shire • Maintained on a monthly basis • Recycling available, not utilised
Major risks	• Potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Oakwood Landfill
Address	Graman Road
Distance to Inverell: 21km	Distance to closest alternate landfill: Cherry Tree 9 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Old quarry site • Site fenced with key access, • No leachate management • Maintained on a fortnightly basis • Recycling available, not utilised • Drum muster collection station, not utilised
Major risks	• Porous granite soils, potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Wallangra Landfill
Address	Wallangra Road
Distance to Inverell: 66 km	Distance to closest alternate landfill: Ashford/ Graman 26 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Old quarry site • 300m to McIntyre River • Site fenced but not secured, 24 hr access • Remaining life about 2 years • No leachate management • Maintained on a monthly basis • Recycling available, not utilised
Major risks	• Porous soils, potential groundwater pollution • Surface water pollution • Conservation • Litter and vermin • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Landfill Name	Yetman Landfill
Address	Warialda Road
Distance to Inverell: 110 km	Distance to closest alternate landfill: Bonshaw 50 km
Population served: < 500	Waste received: 500 tonnes annually
Main features of the site	• Site fenced but not secured, 24 hr access • Fires occur regularly • No leachate management • Maintained by Council as necessary • No recycling available
Major risks	• Potential groundwater pollution • Surface water pollution • Litter • Loss of valuable resources • Fire • Hazardous waste dumping • OH & S issues for visitors and staff

Annexure 2.0: Waste Disposal Pricing Principles

The Independent Pricing and Regulatory Tribunal (IPART) in undertaking an assessment of the Waste Service of NSW in 1996 recommended the adoption of the following principles in relation to the pricing of waste services. These principles are described in further detail below.

- Cost reflectivity;
- Encouragement of efficiency;
- Incorporation of external costs;
- Minimisation of environmental impact;
- Competitive neutrality;
- Concern for equity; and,
- Compatibility with other social objectives.

Cost Reflectivity
The cost of disposal of waste to landfill should reflect the full efficient cost of providing this service and those generating waste requiring disposal should pay the full cost of the service of disposal. This includes direct costs associated with assessment of the waste, handling the waste and disposing of the waste, as well as site maintenance and long term impact avoidance measures, all of which ideally are built into the cost per tonne for waste disposal.

It has been noted also that developing a pricing schedule that is economically, environmental and socially reflective may be appropriate, but if the price becomes too high, many users cannot or will not pay. A reduction in waste amounts generated is not an automatic outcome of higher disposal costs and in fact could lead to more difficult to manage and more damaging behaviour through illegal waste dumping.

Incorporation of external costs
For waste management prices to fully reflect costs, they should also incorporate all the indirect or 'external' environmental and other costs of such activities as previously discussed.

Minimisation of environmental impact
Subject to technological and economic feasibility, prices should be set to encourage minimisation of the adverse environmental impacts of waste management. Where prices are set to incorporate the externalities mentioned above, environmental impact associated with waste generation and disposal can be minimised. However, it is essential that recognition is given also to the concern that very high prices may result in increased levels of illegal waste dumping or the transport of waste to other areas, thereby transferring the problem. The effects of illegal waste dumping in particular, may in fact be worse and more expensive to address than partially subsidised waste accounting.

Competitive neutrality
The charges for waste management services provided by one service provider should not create artificial barriers to competition by another provider. This principle has significance in terms of national competition policy and in terms of ensuring that waste is managed as close to its source of generation as possible. Ideally, waste prices

between LGAs should be as close to each other as can be achieved. In addition, waste should not flow out of the region because disposal prices are cheaper in surrounding areas, nor should it flow in due to under pricing of waste disposal. Due to CVC's geographic location, the transfer of significant quantities of waste into &/or out of the region is not an issue of concern.

Non-discriminatory pricing
Charges for waste management services should reflect the cost of managing that type and amount of waste. Charges should not depend on the source of the waste. Some types of waste such as asbestos clearly have greater cost imposition than others and pricing structures may be developed that reflect that fact, regardless of where waste originates.

Concern for equity
Intra-generational equity means that future generations should not have to bear the costs of current waste management practices. For example, future remediation costs associated with current landfills should be collected now rather than later since they will arise in connection with waste generation in the present.

Compatibility with other social objectives
Other social objectives, such as a community preference for alternatives to landfill should be considered in determining prices. That is, in setting prices for waste management, consideration of concurrent waste objectives should be taken into account. For example, the return of organic matter to agricultural uses could be an important local or regional objective, for which consideration of price for green waste collected or delivered will be a significant variable.

Differential Pricing of Waste Streams
A key practical means of implementing some of the above pricing principles, particularly the cost reflectivity principle, is to develop a waste pricing scheme that reflects various differences in the types of waste materials received. For example, some materials are bulkier than others and some more polluting than others. Some materials should be kept separate from general waste
because of their reuse value or their pollution potential and varying prices helps to achieve this separation.

Annexure 3.0 Ten Year Management Plan - Rural Landfills

Annexure 3.0											
Inverell Shire Council											
Rural Landfill 10 Year Management Plan											
Recurrent Income											
Funding Source	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/2020**
Reserves	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Revenue	$140,130	$100,000	$110,000	$77,800	$140,460	$190,222	$228,633	$234,736	$241,860	$248,406	$256,174
Charges	$0	$0	$30,000	$60,000	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792
Grants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loans	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Income	**$140,130**	**$100,000**	**$140,000**	**$137,800**	**$202,260**	**$253,876**	**$294,197**	**$302,267**	**$311,417**	**$320,049**	**$329,967**
											$2,531,961
Recurrent Expenditure											
Rural Landfill management	$140,130	$100,000	$50,000	$0	$0	$0	$0	$0	$0	$0	$0
Ashford											
Supervision Contract	$0	$0	$8,000	$15,450	$15,900	$16,400	$16,850	$17,350	$17,900	$18,400	$19,000
Waste Transfer	$0	$0	$0	$10,000	$20,000	$20,600	$21,200	$21,800	$22,450	$23,000	$23,700
Waste Disposal	$0	$0	$0	$13,000	$27,000	$27,810	$28,644	$29,504	$30,389	$31,300	$32,239
Maintenance	$0	$0	$17,000	$8,000	$8,240	$8,487	$8,742	$9,004	$9,274	$9,552	$9,839
Yetman											
Supervision Contract	$0	$0	$8,000	$15,450	$15,900	$16,400	$16,850	$17,350	$17,900	$18,400	$19,000
Waste Transfer	$0	$0	$0	$0	$12,000	$20,600	$21,200	$21,800	$22,450	$23,000	$23,700
Waste Disposal	$0	$0	$0	$0	$15,000	$25,750	$26,500	$27,000	$27,800	$28,600	$29,500
Maintenance	$0	$0	$15,000	$15,000	$7,210	$7,426	$7,649	$7,879	$8,115	$8,358	$8,609
Bonshaw											
Supervision Contract	$0	$0	$8,000	$15,450	$15,900	$16,400	$16,850	$17,350	$17,900	$18,400	$19,000
Waste Transfer	$0	$0	$0	$0	$12,000	$11,000	$21,200	$21,800	$22,450	$23,000	$23,700
Waste Disposal	$0	$0	$0	$0	$15,000	$25,750	$26,500	$27,000	$27,800	$28,600	$29,500
Maintenance	$0	$0	$15,000	$15,000	$7,210	$7,426	$7,649	$7,878	$8,115	$8,358	$8,609
Delungra											
Supervision Contract	$0	$0	$4,000	$15,450	$15,900	$16,400	$16,850	$17,350	$17,900	$18,400	$19,000
Waste Transfer	$0	$0	$0	$0	$0	$11,000	$21,200	$21,800	$22,450	$23,000	$23,700
Waste Disposal	$0	$0	$0	$0	$0	$15,000	$28,664	$29,524	$30,410	$31,322	$32,262
Maintenance	$0	$0	$15,000	$15,000	$15,000	$7,426	$7,649	$7,878	$8,115	$8,358	$8,609
Total Expenditure	**$140,130**	**$100,000**	**$140,000**	**$137,800**	**$202,260**	**$253,876**	**$294,197**	**$302,267**	**$311,417**	**$320,049**	**$329,967**
											$2,531,961

Annexure 3 continued											
Capital Income											
Funding Source	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/2020**
Reserves (Augmentation)	$0	$175,000	$177,000	$110,000	$230,000	$117,000	$0	$0	$0	$0	$0
Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Charges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Grants	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loans	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Income	**$0**	**$175,000**	**$177,000**	**$110,000**	**$230,000**	**$117,000**	**$0**	**$0**	**$0**	**$0**	**$0**
											$809,000
Capital Expenditure											
Landfill Closure	$0	$175,000	$105,000	$0	$0	$0	$0	$0	$0	$0	$0
Ashford											
Secure site	$0	$0	$18,000	$0	$0	$0	$0	$0	$0	$0	$0
Construct Transfer Station	$0	$0	$0	$75,000	$0	$0	$0	$0	$0	$0	$0
Landfill Closure	$0	$0	$0	$35,000	$0	$0	$0	$0	$0	$0	$0
Yetman											
Secure site	$0	$0	$18,000	$0	$0	$0	$0	$0	$0	$0	$0
Construct Transfer Station	$0	$0	$0	$0	$75,000	$0	$0	$0	$0	$0	$0
Landfill Closure	$0	$0	$0	$0	$40,000	$0	$0	$0	$0	$0	$0
Bonshaw											
Secure site	$0	$0	$18,000	$0	$0	$0	$0	$0	$0	$0	$0
Construct Transfer Station	$0	$0	$0	$0	$75,000	$0	$0	$0	$0	$0	$0
Landfill Closure	$0	$0	$0	$0	$40,000	$0	$0	$0	$0	$0	$0
Delungra											
Secure site	$0	$0	$18,000	$0	$0	$0	$0	$0	$0	$0	$0
Construct Transfer Station	$0	$0	$0	$0	$0	$77,000	$0	$0	$0	$0	$0
Landfill Closure	$0	$0	$0	$0	$0	$40,000	$0	$0	$0	$0	$0
Total Expenditure	**$0**	**$175,000**	**$177,000**	**$110,000**	**$230,000**	**$117,000**	**$0**	**$0**	**$0**	**$0**	**$0**
											$809,000

Notes: Major changes to the way the current 12 rural landfill sites are managed will be introduced over a 5 year period commencing in 20010/11

Year 1. will involve the closure and rehabilitation of 5 rural landfills and the improved maintenance of the remaining 7 landfills.

Year 2. will involve the closure and rehabilitation of a further 3 landfills, securing all remaining landfills and introduction of supervision and fees.

Year 3. will involve the closure and rehabilitation of the Ashford landfill and the construction of a transfer station at the site.

Year 4. will involve the closure and rehabilitation of the Bonshaw & Yetman landfill and the construction of a transfer station at the sites.

Year 5. will involve the closure and rehabilitation of the Delungra landfills and the construction of a transfer stations at the site.

Income based on an 250 tonnes per year, per transfer station at $60 per tonne increasing annually by 3% CPI

Capital expenditure to develop transfer stations can be fully funded from the Waste Management Augmentation reserve

Recurrent expenditure to operate transfer stations can be fully funded from disposal charges and the annual waste levy

Annexure 4.0: Draft Waste Management Budget

Domestic Waste Management Cost Centre		**2009\10**	**2010\11**	**2011/12**
Income				
G2542	MRF- Income	-$16,390.00	$0.00	$0.00
G2548	Domestic Waste Management - vacant	$0.00	-$3,300.00	-$3,300.00
G2550	Domestic Waste Management - occupied	-$1,148,458.46	-$1,266,327.00	-$1,285,321.91
xxxx	Interest on reserve & outstanding charges	-	-	-
	Total	-$1,164,848.46	-$1,269,627.00	-$1,288,621.91
Expenses				
xxxx	Administration	$228,657.00	$222,385.00	$233,504.25
G3530	Bin Purchases (includes additional services)	$6,500.00	$6,500.00	$7,000.00
G3534	Domestic Garbage Collection	$145,680.00	$132,227.00	$184,007.21
G3534	Domestic Recycling Collection	$72,840.00	$70,000.00	$89,267.00
G3534	Domestic Organics Collection	$0.00	$0.00	$0.00
xxxx	Domestic Garbage Disposal	$477,891.00	$370,500.00	$380,000.00
G3542	Domestic Recycling Processing	$132,280.00	$132,200.00	$136,166.00
xxxx	Domestic Organics Processing	$0.00	$0.00	$0.00
G3547	Waste Education	$5,000.00	$22,000.00	$22,660.00
xxxx	NIRW	$0.00	$10,000.00	$10,300.00
xxxx	Net Pensioner Rebate	$48,000.00	$48,000.00	$49,440.00
xxxx	Transfer to reserves	$0.00	$225,280.00	$0.00
xxxx	Transfer to Domestic Waste Reserve	$48,000.00	$30,535.00	$176,277.45
	Total	$1,164,848.00	$1,269,627.00	$1,288,621.91
Other Waste Management Cost Centre				
Income				
G2541	Waste Management Charge - levy	-$244,512.00	-$322,266.00	-$325,000.00
G2543	Inverell Landfill Waste Disposal Charges	-$95,000.00	-$191,000.00	-$516,082.69
xxxx	Transfer Station Waste Disposal Charges (Rural Landfills)	$0.00	$0.00	-$30,000.00
G2544	Waste Collection - Commercial	-$63,335.65	-$55,660.00	-$57,329.80
xxxx	Domestic Waste Disposal Charge	-$477,891.00	-$370,000.00	-$381,100.00
xxxx	Domestic Waste Contribution to reserves	$0.00	-$225,280.00	$0.00
G2553	Trade Waste Charges	-$23,000.00	-$20,000.00	$0.00
	Total	-$903,738.65	-$1,184,206.00	-$1,309,512.49
Expenses				
xxxx	Administration	$57,164.00	$95,308.00	$98,167.24
xxxx	Commercial Waste Collections	$0.00	$10,123.00	$10,426.69
G3537	Transfer Station Working Expenses (Rural Landfills)	$140,130.00	$100,000.00	$140,000.00
G3538	Inverell Landfill Contract	$333,070.00	$452,918.00	$466,505.54
G3536	Inverell Landfill Other Expenses	$70,860.00	$72,985.80	$75,175.37
xxxx	Concrete Processing	$0.00	$10,000.00	$10,300.00
G3539	Garbage Tip Contract Others	$35,610.00	$36,678.30	$37,778.65
G3542	Recycling Cost	$10,000.00	$10,300.00	$10,609.00
G3545	Chemical Waste Clean Up	$5,000.00	$5,000.00	$5,000.00
G3546	Drum Muster	$500.00	$500.00	$500.00
xxxx	Transfer to Waste Infrastructure Augmentation Reserve	$0.00	$100,000.00	$103,000.00
xxxx	Transfer to Landfill Closure and Rehabilitation Reserve	$102,000.00	$60,000.00	$61,800.00
xxxx	Transfer to Future Waste Disposal Needs Reserve	$100,000.00	$175,000.00	$180,250.00
xxxx	Transfer to Sustainability Externality Reserve	$0.00	$50,000.00	$100,000.00
xxxx	Dividend to Council	$49,404.65	$5,392.90	$10,000.00
	Total	$903,738.65	$1,184,206.00	$1,309,512.49
Non Recurrent Other Waste Income				
Income				
xxxx	Transfer from Waste Infrastructure Augmentation Reserve	$0.00	-$175,000.00	-$177,000.00
xxxx	Transfer from waste reserves	-$604,000.00	$0.00	$0.00
	Total	-$604,000.00	-$175,000.00	-$177,000.00
Non Recurrent Other Waste Expenditure				
Expenses				
xxxx	Close Rural Landfills	$0.00	$175,000.00	$177,000.00
xxxx	Construct Landfill Weighbridge	$250,000.00	$0.00	$0.00
xxxx	Upgrade MRF	$120,000.00	$0.00	$0.00
xxxx	Land Purchase (Inverell Landfill)	$234,000.00	$0.00	$0.00
	Total	$604,000.00	$175,000.00	$177,000.00