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<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<tr>
<td>ACCUs</td>
<td>Australian Carbon Credit Units</td>
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<td>AD</td>
<td>Anaerobic Digestion</td>
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<td>ATT</td>
<td>Alternative Thermal Treatment</td>
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<td>ARRT</td>
<td>Advanced Resource Recovery Technology</td>
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<td>BAU</td>
<td>Business as Usual</td>
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<tr>
<td>BOOT</td>
<td>Build Own Operate Transfer (contract)</td>
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<tr>
<td>C&amp;D</td>
<td>Construction and Demolition (waste)</td>
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<td>Commercial and Industrial (waste)</td>
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<td>Contract Management Plans</td>
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<td>Consumer Price Index</td>
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<td>Community Recycling Centre</td>
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<td>Community Strategic Plan</td>
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<td>CWMF</td>
<td>Cairncross Waste Management Facility</td>
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<td>CO₂-e</td>
<td>Carbon dioxide equivalent</td>
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<td>CPI</td>
<td>Consumer Price Index</td>
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<td>CPM</td>
<td>Carbon Pricing Mechanism</td>
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<td>COAG</td>
<td>Council of Australian Governments</td>
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<td>Department of Climate Change and Energy Efficiency</td>
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<td>Environmental Protection Authority</td>
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<td>Expanded Polystyrene</td>
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<td>ERF</td>
<td>Emissions Reduction Fund</td>
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<td>Environmental Impact Statement</td>
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<td>Energy from Waste (a.k.a. WtE)</td>
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<td>FO</td>
<td>Food Organics (only)</td>
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<td>FOGO</td>
<td>Food organics and garden organics</td>
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<td>GEDO</td>
<td>Greenhouse and Energy Data Officer</td>
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<td>Greenhouse Gas</td>
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<td>GO</td>
<td>Garden organics (no food)</td>
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<td>GWP</td>
<td>Global Warming Potential</td>
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<td>Abbreviation</td>
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<tr>
<td>HHW</td>
<td>Household Hazardous Waste</td>
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<td>Ha</td>
<td>Hectares</td>
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<td>KRA</td>
<td>Key Result Areas</td>
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<td>KSC</td>
<td>Kempsey Shire Council</td>
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<td>LCG</td>
<td>Landfill Gas Capture</td>
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<td>LGA</td>
<td>Local Government Area</td>
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<td>LFG</td>
<td>Landfill gas</td>
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<td>MAF</td>
<td>Mobile Aerated Floor (composting)</td>
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<td>MBT</td>
<td>Mechanical Biological Treatment</td>
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<td>MGB</td>
<td>Mobile Garbage Bin</td>
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<td>Memorandum of Agreement</td>
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<td>MRF</td>
<td>Materials Recovery Facility</td>
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<td>MSW</td>
<td>Municipal Solid Waste (collected in the kerbside red lidded bin)</td>
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<td>MIDWASTE</td>
<td>Mid north coast regional waste group</td>
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<td>MUDs</td>
<td>Multiple Unit Dwellings</td>
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<td>Memorandum of Agreement</td>
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<td>NWP</td>
<td>National Waste Policy</td>
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<td>NGER</td>
<td>National Greenhouse and Energy Reporting</td>
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<td>OEH</td>
<td>Office of Environment &amp; Heritage</td>
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<td>Oil Stewardship Advisory Council</td>
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<td>ORRF</td>
<td>Organics Resource Recovery Facility</td>
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<td>pa</td>
<td>per annum</td>
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<td>PoEO</td>
<td>Protection of the Environment Operations</td>
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<td>PMHC</td>
<td>Port Macquarie-Hastings Council</td>
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<tr>
<td>Residual waste</td>
<td>Residual waste subsequent to any recycling process</td>
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<td>RET</td>
<td>Renewable Energy Target</td>
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<td>reArt</td>
<td>International Upcycle Exhibition</td>
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<td>RID</td>
<td>Regional Illegal Dumping</td>
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<td>Single Unit Dwellings</td>
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<tr>
<td>tpa</td>
<td>tonnes per annum</td>
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<tr>
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<td>Transfer Station</td>
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<td>VKT</td>
<td>Vehicle Kilometres Travelled</td>
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<td>WSP</td>
<td>Waste Service Provider</td>
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<td>WLRM</td>
<td>Waste Less Recycle More</td>
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<td>Waste and Resource Recovery</td>
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<td>WtE</td>
<td>Waste to Energy (a.k.a. EfW)</td>
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1 Introduction

1.1 Port Macquarie-Hastings Council

The Port Macquarie-Hastings Council (Council or PMHC) local government area is located on the Mid North Coast of New South Wales, about 420 kilometres north of Sydney, and 510 kilometres south of Brisbane (Figure 1). It is bounded by Kempsey Shire in the north, Mid Coast Council in the south, Walcha Shire in the west, and by 84km of coastline to the east.

The local government area includes significant rural, residential and resort land uses. A considerable proportion of the land area is State Forest and National Park, which includes beaches, waterways, coastal wetlands, flood plains and rugged mountain ranges. It encompasses a total land area of 3,687 square kilometres, with the three main regional districts being, Port Macquarie, Camden Haven and Wauchope.

Port Macquarie itself is the largest township and serves as both a major tourist destination and a regional centre. Camden Haven is the next most populated area and includes the towns of Dunbogan, Kendall, Kew, Laurieton, North Haven and West Haven. Wauchope serves as a district inland centre, particularly for rural communities and agricultural industries.

Figure 1 Port Macquarie-Hastings Council area
 Council’s previous 2011-2015 Waste and Resource Management Strategy (WRM Strategy) provided the platform for substantial achievements in local waste management. However, much has changed since its release. Population growth is on the rise, community expectations remain high, cost structures are changing, and State Government intervention with both economic disincentives and incentives to influence waste management is at an all-time high. It is therefore timely for Council to review its achievements, assess the key industry drivers and create a renewed vision and strategic direction for waste management.

1.3 Background and Options Report for the Port Macquarie-Hastings Waste Strategy: 2017 – 2024
 As a first step to developing this Port Macquarie-Hastings Waste Strategy: 2017 – 2024 (The Waste Strategy) a Background and Options Report reviewed the drivers relevant to current and future waste management in the Port Macquarie-Hastings area, assessed the implications with respect to Council’s strategic waste management position and developed a renewed vision for sustainable waste management. The Background and Options Report have formed the basis of The Waste Strategy.

 The Port Macquarie-Hastings Waste Strategy: 2017 – 2024 is designed to provide a framework and an informed and sustainable direction for all of Council’s waste and resource management activities over the next eight (8) years. It has been developed to focus on specific and unique local issues and challenges, building upon the momentum gained through the implementation of the previous WRM Strategy. The Waste Strategy will:

- align with the objectives of the NSW Waste and Resource Recovery Strategy: 2014 – 2021 (the NSW WARR Strategy);
- integrate with, and leverage off, the Midwaste Regional Waste Avoidance and Resource Recovery Strategy: 2014 – 2021 (the Regional WARR Strategy); and
- assimilate with integrated planning and reporting frameworks to ensure linkages with Operational and Delivery Plans.

The delivery mechanism for the Waste Strategy will be via the implementation of action plans focussing on achieving specific objectives and targets associated with overarching programs or Key Result Areas. This delivery mechanism is being developed in consideration of a series of guiding principles, or focus areas, that have been identified as being important to Council’s strategic waste management future (Section 5.3).
2 Community Profile and Demographics

2.1 Population

Council covers an area of 368,610 hectares. With a population density of approximately 20.6 persons per km², it is home to over 79,144 residents. Population density aligns with areas of high economic activity with the coastal regions being the most populous area (Figure 1).

Council is, on average, significantly more populated than NSW (9.1 persons per km²). The population of the greater Port Macquarie region has been growing rapidly for the past 10 years (ABS, 2014) and is expected to grow by over 30% to 102,926 residents in 2036 (Forecast ID, 2015).

The growth rate of approximately 1.38% per annum between 2004 and 2014 (Figure 2) is higher than the average for the Mid North Coast (1.1%) and New South Wales (0.8%). The NSW North Coast Regional Plan identifies PMHC as a priority area for urban growth¹. Factors contributing to population growth include business development and internal migration from areas such as Sydney and surrounding suburbs.

Figure 2 Port Macquarie-Hastings historical population and forecast growth

2.2 Demographic Groups and Employment

The largest single demographic group by age is that of over 60 year olds (32%), however there is also a high percentage of 0-14 year olds (17%). The average age of the PMHC population at 47 is higher than the average in Australia (37 years²). This trend is due to many young adults leaving PMHC in search of job opportunities, travel or tertiary education.

The main employing sector is Health Care and Social Assistance (16%), followed by Retail Trade (13.5%) (ABS census, 2011). These industry statistics correspond well with the needs of an aging population and the

¹ NSW Department of Planning, 2017
² Australian Bureau of Statistics, 2013
flourishing tourism of the PMHC region. The construction industry is another thriving industry (9.2%) in PMHC, and indeed nationwide, as a response to increased demand for housing.

2.3 Household Types

The majority of households within the PMHC region are Single Unit Dwellings (SUDs), which make up 73% of the housing stock while Multi-Unit Dwellings (MUDs) represent about a quarter of all households (ABS, 2013). The ‘other’ category accounts for caravans, cabins and houseboats.

Figure 3 Household types in PMHC based on 2011 Census data

Building approvals for MUDs exceeded the number of approvals for SUDs each year from 2009 to 2013 (ABS, 2013). The varying nature of MUDs and SUDs has the potential to impact waste collection services, and council needs to consider this to ensure services are sustainable for the future.

Figure 4 Building approvals in PMHC based on 2009-2013 census data
3 Strategy Framework

3.1 National

The Commonwealth Government has limited constitutional powers to engage directly in local waste management issues. This responsibility rests largely with State, Territory and local governments. However, the Commonwealth Government has always had an important role in waste policy as it relates to Australia’s international commitments for the movement of hazardous waste. Moreover, in recent years it has taken on a strategic involvement in waste policy development, releasing the 2010 National Waste Policy.

The Commonwealth Government also has a particular focus on developing consistent national approaches for key product sectors. The National Packaging Covenant is an example of this. It is a co-regulatory agreement for the management of packaging waste in Australia. The Covenant is administered by the National Packaging Covenant Council (NPCC), which consists of representatives from government, environmental agencies, industry groups and local government.

The Commonwealth Government also administers a product stewardship program for oil recycling, under which the Oil Stewardship Advisory Council (OSAC) provides advice to the Government on general operation of the stewardship arrangements and possible future directions.

The primary forum for interaction between the Commonwealth and other jurisdictions on waste matters is the Environment Protection and Heritage Council (EPHC). In addition, the Department of Environment is responsible for overseeing national programs.

Specific waste management legislation in place at the national level is limited to the Hazardous Waste (Regulation of Imports and Exports) Act 1989, which aims to regulate the export, import and transit of hazardous waste both within and outside Australia, and the Product Stewardship (Oil) Act 2000.

3.1.1 National Waste Policy

The Australian Government released a National Waste Policy (NWP) Statement in November 2009 entitled National Waste Policy: Less Waste, More Resources. The aims of the national policy are to:

Avoid the generation of waste, reduce the amount of waste (including hazardous 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.

Sixteen strategies have been identified within the NWP, which are to be pursued through a multi-jurisdictional approach. These include a national framework for product stewardship and extended producer responsibility.

More recently, the EPHC met to establish six (6) key areas of reform for the NWP. These include taking responsibility, improving the market, pursuing sustainability, reducing hazard and risk, tailoring solutions and providing the evidence.

Activities under the 16 strategies include working to remove market impediments to the development of effective markets for recovered resources, improving certainty, reducing costs for governments and business and facilitating investment in necessary infrastructure.
Additional strategies will be developed for organic waste, which complement the Australian Government’s climate change and sustainability agendas and options for enhancing the capacity of regional and remote communities to manage their waste more effectively. Efforts will continue to help reduce the potentially hazardous content of e-wastes and ensure that these wastes are recovered.

A product stewardship framework will provide support through voluntary accreditation of community and industry run recycling schemes. Key areas of focus will include mercury containing lights, tyres, packaging, workplace recycling, public place recycling, television and computer recycling.

The process by which the NWP will influence waste management will be through a range of collective multilateral processes (e.g. COAG, EPHC and related Commonwealth-State working parties) and then via State policy intent and regulation. The EPHC has also promised a rapid progression of initiatives, which will affect the collection and recycling of a range of minor streams.

3.1.2 National Greenhouse and Energy Reporting (NGER) Act 2007

The National Greenhouse and Energy Reporting (NGER) Act 2007 establishes a national system for reporting greenhouse gas emissions, energy consumption and production by corporations. Its development was initiated through the Council of Australian Governments (COAG) in 2006.

The NGER Act 2007 established the Greenhouse and Energy Data Officer (GEDO) as the regulatory and administrative decision-maker. This is now the responsibility of the Clean Energy Regulator and is currently administered by the Department of Climate Change and Energy Efficiency.

Data reported under the NGER Act 2007 underpinned the now repealed carbon pricing mechanism and now supports the Emissions Reduction Fund (ERF). Through the ERF, the Government purchases lowest cost abatement (in the form of Australian carbon credit units) from a wide range of sources, providing an incentive to businesses, households and landowners to proactively reduce their emissions. Monitoring, reporting and auditing of Council’s greenhouse gas emissions data will be essential to maintaining the environmental and financial integrity of the ERF.

Key features of the NGER Act 2007 are:

- Reporting of greenhouse gas emissions, energy consumption and production by large corporations;
- Public disclosure of company level greenhouse gas emissions and energy information;
- Consistent and comparable data available for decision making; and
- A reduction in the number of greenhouse and energy reports required across State, Territory and Australian Government programs.

3.1.3 The National Greenhouse and Energy Reporting (Measurement) Determination 2008


The initial instrument, National Greenhouse and Energy Reporting (Measurement) Determination 2008 has been updated annually, in 2009 and 2010, reflecting improvements in estimation methods and responding to feedback from industry. The National Greenhouse and Energy Reporting (Measurement) Amendment Determination 2011 continues this process and is applicable to reporting required for the National...
Greenhouse and Energy Reporting Act 2007, in the 2011-12 reporting year. The range of emission sources covered in the Determination includes:

- Waste management;
- The combustion of fuels for energy;
- Fugitive emissions from the extraction of coal;
- Oil and gas; and
- Industrial processes (such as producing cement and steel).

The methods used within the NGER (Measurement) Determination are based on those used for the National Greenhouse Accounts (DCCEE, 2011).

3.1.4 The Direct Action Plan and the Emissions Reduction Fund

The Direct Action Plan has replaced the CPM as the primary legislation directed at meeting Australia’s commitment to reduce GHG emissions. The objective of the Direct Action Plan is to assist Australia to meet its emissions reduction target of 5% below 2000 levels by 2020. Direct Action consists of a number of initiatives including:

- The $2.5 billion ERF to support direct action by business to reduce emissions;
- Boosting renewable energy, especially solar; and
- Support for emerging technologies through the Renewable Energy Target (RET).

Through the ERF, the Government purchases lowest cost abatement (in the form of Australian Carbon Credit Units (ACCUs)) from a wide range of sources, providing an incentive to businesses, households and landowners to reduce emissions.

In order to participate in the ERF, project proponents must carry out a project in accordance with a methodology determination to appropriately estimate abatement from certain activities.

Approved methods for the waste and recycling sectors include:

- Landfill gas capture and destruction;
- Alternative Waste Treatment; and
- Wastewater treatment.

New methods, which should be ready for the next auction, include:

- Diversion of Source Separated Organics (including Food and Garden waste) – currently in draft;
- Biofilters;
- Phytocaps;
- Energy from waste; and
- Waste avoidance projects.

The Direct Action Plan was passed into law in October 2014 and the first allocation of funds was held on April 15-16th. A total of 47 million tonnes of CO2-e was purchased at an average price of $13.95 per tonne. Of this, the waste industry accounts for nearly 17 million t CO2-e or 35% of total volume purchased, proving that the waste industry continues to play a major role in emissions reduction efforts.

To make good on these contracts, create carbon credits and generate revenue, existing and prospective project proponents need to:
• Register a project with the Clean Energy Regulator as soon as possible;
• Forecast emissions over the next seven (7) years;
• Register for the next auction;
• Bid at auction;
• If successful, carry out the project, and report progress;
• Deliver abatement in accordance with the delivery schedule; and
• Receive funds from the government for the abatement.

Council was successful in developing a methodology for the Carbon Farming Initiative for diversion of waste to landfill through alternative waste treatment, and has completed an initial sale of credits generated. This methodology has transitioned successfully to the ERF.

Council has gained recent approval for landfill gas capture at Cairncross Waste Management Facility under the ERF.

3.1.5 Extended Producer Responsibility Schemes
Extended Producer Responsibility (EPR) policies aim to minimise waste generation and toxicity and maximise recycling. EPR policies engage producers and others involved in the supply chain of a product to take responsibility for the environmental, health and safety footprint of those products. This includes the design and manufacture of a product, as well as how the product is managed at the end of its life (including resource recovery and proper disposal).

The NWP commits the Australian Government, with the support of State and Territory governments to establish a national waste framework underpinned by legislation to support voluntary, co-regulatory and regulatory product stewardship and extended producer responsibility schemes to provide for the impacts of a product being responsibly managed during and at end of life (DECC, 2010c). Councils are encouraged to support any EPR programs implemented by the Commonwealth and/or NSW State Government and assist to implement them at a local level. This is particularly important for computers and televisions under the Product Stewardship Act 2011 and ensuing National Television and Computer Recycling Scheme.

3.1.6 Organic waste
The NWP provides specific strategies for organic waste which include:

• Continued government focus to reduce the amount of biodegradable material sent to landfill;
• Management of safety and health risks arising from landfill gas emissions; and
• Development of a strategy for emissions from landfills and other waste activities not covered by the ERF.

The strategy states that 62% of all waste that is landfilled in Australia comprises of organic material. Of the 13.6 million tonnes of organic waste landfilled, 7.1 million tonnes were from households and 5 million tonnes was from C&I waste. The recovery rate of organics was also the lowest in the household sector at only 23% compared to 46% in the C&I sector. Only 26% of the landfill gas generated by organics in landfill is captured by landfill gas generation systems Australia wide.

The Australian Government has proposed the following options to reduce the environmental impacts of the landfilling of organic waste:

• The expansion of energy production from organic wastes;
- Taking action to address greenhouse gas emissions from organic wastes; and
- Implementing standards and guidance for organics waste products such as mulch compost and soil conditioners to increase their uptake in consumer markets.

As well as reducing emissions of landfill gas, better management of organics will generate significant greenhouse gas benefits; for example, one (1) tonne of composted mulch applied to agricultural land can sequester 25kg of carbon in soil whilst also improving soil fertility and water retention (NWP, 2010).

### 3.1.7 Hazardous Waste Act 1989

The Department of the Environment administers and implements the Hazardous Waste (Regulation of Exports and Imports) Act 1989. The Act was developed to enable Australia to comply with specific obligations under the Basel Convention on the Control of the Transboundary Movements of Hazardous Wastes and their disposal; a Convention set up to control the international movements of hazardous wastes.

Council is bound to comply with all obligations under the Act in regard to any hazardous waste.

### 3.2 State

The NSW Government administers the State environmental legislation. Its objective is to provide a clear and consistent regulatory and policy framework that minimises harm to the environment, encourages waste avoidance and resource recovery. This framework uses a mix of legislative, policy, educational and economic tools to guide and influence waste management in NSW.


Regulatory mechanisms set out in the legislation such as the waste and environment levy help drive waste avoidance and resource recovery by providing an economic incentive to reduce waste disposal and stimulate investment and innovation in resource recovery technologies.

To facilitate the beneficial reuse of waste materials, the NSW Government is able to exempt from certain regulatory requirements, the use of waste as fuel or its application to land. These exemptions are known as resource recovery exemptions and are only issued where the proposed use of the waste material is beneficial and does not cause harm to the environment or human health.

Reducing the generation of waste and turning it into recoverable resources are priorities for NSW. To meet this challenge, a number of programs have been established under the Waste Avoidance and Resource Recovery (WARR) Strategy 2007 (OEH, 2011).

### 3.2.1 Protection of the Environment Operations (POEO) Act 1997

The *Protection of the Environment Operations (POEO) Act 1997* aims to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote pollution prevention, the elimination of harmful wastes, the reduction in the use of materials and the re-use and recovery or recycling of materials.
Council owns and operates the Cairncross Landfill. To this end, Council must also meet the legislative requirements and responsibilities under the POEO Act 1997 in operating this facility.

3.2.2 Section 88 levy
Regulatory mechanisms such as the Section 88 waste and environment levy (the Waste Levy) help drive waste avoidance and resource recovery by providing an economic incentive to reduce waste disposal and stimulate alternative waste technologies (OEH, 2011).

The Waste levy only currently applies to the regulated area of NSW, that is the Sydney Metropolitan area, the Illawarra and Hunter regions, the central and north coast local government areas to the Queensland border as well as the Blue Mountains, Wingecarribee and Wollondilly local government areas. Certain licensed facilities in these regions are required to pay a contribution for each tonne of waste received at the facility. This aims to drive a reduction in the amount of waste being landfilled and promote recycling and resource recovery.

3.2.3 Protection of the Environment Operations (Waste) Regulation 2005
The Protection of the Environment Operations (Waste) Regulation 2005 led to the introduction of a mechanism during 2008 which was aimed at recognising genuine resource recovery in NSW. Exemptions allowing land application and thermal application of waste-derived material were introduced under section 51 of the Regulation. The Regulation also sets out provisions covering the way waste is managed in terms of storage and transportation as well as reporting and record keeping requirements for waste facilities.

The Regulation:
- Provides for contributions to be paid by the occupiers of licensed waste facilities for each tonne of waste received at the facility or generated in a particular area;
- Exempts certain occupiers or types of waste from these contributions;
- Allows deductions to be claimed in relation to certain types of waste; and
- Makes special requirements relating to asbestos and clinical waste (OEH 2011).

3.2.3.1 Protection of the Environment Operations (Waste) Regulation 2014
The PoEO (Waste) Regulation 2014 (PoEO Waste Regulation) relates to the regulation of waste and resource recovery in NSW. The regulation came into effect on 1 November 2014. It gives effect to the broad objectives and specific provisions within the PoEO Act relating to waste, including:
- The administration of the section 88 contribution (the waste levy) within the POEO Act;
- Waste tracking and transportation requirements and obligations;
- Management requirements for special wastes (e.g. asbestos and clinical and related waste);
- Makes it an offence to apply, or to cause or permit the application of, residue waste to land that is used for the purpose of growing vegetation, subject to any exemptions;
- Provisions for the recycling of consumer packaging;
- Exemption powers from the requirements of the PoEO Waste Regulation for waste;
- Improving management of high-risk contaminants through immobilisation;
- Reduction of licensing thresholds for waste activities; and
- Enforcement of the Proximity Rule: offense for transport of waste – the purpose of the proximity rule is to address the environmental and health impacts of transporting waste over unnecessarily long
distances, usually in order to take advantage of lower landfill gate fees in unregulated areas or interstate. Under this rule, it is illegal to transport waste to a waste disposal facility by truck outside a 150km radius. In the event that a facility is not available within this radius, the waste can be transported by truck to one of two of the nearest lawful waste disposal facilities.

The EPA encourages the recovery of resources from waste by issuing both Resource Recovery Orders and Resource Recovery Exemptions. Orders include conditions which generators and processors of waste must meet to supply waste for land application, use as fuel or in connection with a process of thermal treatment. This may include certain specifications, record keeping and other reporting requirements. Exemptions are issued for commonly recovered, high-volume and well characterised waste materials. An exemption may be used by anyone, without seeking approval from the EPA, provided the generators; processors and consumers fully comply with the conditions of the exemption.

Council is legally bound to comply with all statutes and obligations with regards to waste management and is required to pay the waste and environment levy on every tonne of waste buried at landfill.

3.2.4 Waste Avoidance and Resource Recovery Act 2001
The Waste Avoidance and Resource Recovery Act 2001 (WARR Act) is the primary Act governing resource recovery in NSW. The primary objective of the WARR Act is to contribute to both sustainability and the protection of human health and the environment. The objectives of the WARR Act promote:

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

The WARR Act defines a Waste Hierarchy (Figure 5), which ranks waste management options in order of general environmental desirability. Generally, the higher waste is managed up the hierarchy, the lower the impact and risk to the environment and communities. The waste hierarchy is intended for use alongside other assessment tools, such as cost benefit analysis, to guide decision-making.
The WARR Act also sets out responsibility for waste management, provides for the continual reduction in waste generation and ensures efficient funding of waste and resource management planning, programs and service delivery.

Council is bound to comply with all obligations governing resource recovery and will use the overarching objectives of the WARR Act to guide the development of the Strategy.

### 3.2.5 NSW Waste Avoidance and Resource Recovery Strategy 2014–21

The NSW Waste Avoidance and Resource Recovery Strategy 2014–21 (WARR Strategy) provides a framework for waste management in NSW. Development of a WARR Strategy, including targets for waste reduction, resource recovery and the diversion of waste from landfill disposal, is required under the WARR Act.

The primary goal of the WARR strategy is:

> “to enable all of the NSW community to improve environment and community well-being by reducing the environmental impact of waste and using resources more efficiently.”

The WARR Strategy aims to support investment in waste infrastructure, encourage innovation, improve recycling behaviour, promote the development of new markets for recycled materials and reduce litter and illegal dumping.

The NSW EPA Waste Less, Recycle More (WLRM) initiative provides $465.7 million in financial support from waste levy revenue for the WARR Strategy.

The following targets have been set for 2021-22:

- Avoiding and reducing the amount of waste generated per person in NSW;
- Increasing recycling rates to 70% for municipal solid waste;
- Increasing recycling rates to 70% for commercial and industrial waste;
- Increasing recycling rates to 80% for construction and demolition waste;
- Increasing waste diverted from landfill to 75%;
- Managing problem wastes better, establishing 86 drop-off facilities and services across NSW;
• Reducing litter, with 40% fewer items (compared to 2012) by 2017; and
• Combating illegal dumping, with 30% fewer incidents (compared to 2011) by 2017.

Council will use the WARR Strategy to guide the development of its resource recovery targets. Council will also keep abreast of developments in WLRM funding and will apply for funding to support and augment any of the described actions in order to achieve its objectives more efficiently.

3.2.6 NSW Energy from Waste Policy Statement 2014
In 2014, the NSW EPA released its finalised (Energy from Waste) EfW Policy Statement to replace the 2005 Guidance Note: Assessment of Non-Standard Fuels. The statement sets a framework for the operation of purpose-built facilities to recover energy from residual wastes that are not able to be recycled and would otherwise be disposed of to landfill.

The policy also facilitates the use of certain low-risk wastes as fuels which, due to their origin, low levels of contaminants, homogeneity and consistency over time, are considered by the EPA to pose a minimal risk of harm to human health and the environment.

The NSW EfW Policy Statement is designed to encourage the recovery of the embodied energy from waste while offsetting the use of non-renewable energy sources and avoiding methane emissions from landfill. It will ensure that this energy recovery:

• Has minimal risk of harm to human health and the environment; and
• Will not undermine higher order waste management options, such as avoidance, reuse or recycling.

3.2.7 Relevant NSW Planning Controls
3.2.7.1 The Environmental Planning and Assessment (EP&A) Act 1979
The Environmental Planning and Assessment Act (EP&A) 1979 is the principal NSW State Government Act that covers environmental planning and assessment. Planning and assessment for new waste infrastructure projects and developments is governed by this Act.

In general, planning for waste activities and facilities is relatively inconsistent in NSW. The NSW State Government does not play an active role in forward or strategic planning for waste infrastructure, leaving it almost entirely to local government and the market (OEH 2011).

3.2.7.2 Development Approvals and Part 4 of the EP&A Act
Under the NSW Environmental Planning and Assessment Act, individual local councils are the consent authority for waste infrastructure projects, unless that project is categorised as Regional or State Significant Development under Part 4 of the EP&A Act.

3.2.8 Landfill SEPP
During July 2010, the NSW Government amended the Infrastructure State Environmental Planning Policy (SEPP) for Landfill Applications (2007) relating to mandatory considerations for determining applications for landfill facilities under Environmental Planning and Assessment Act 1979.
Clause 123 of the Infrastructure SEPP prescribes criteria that consent authorities must consider when assessing and determining applications for landfill facilities. On 7th July 2010, clause 123 was amended to reflect changes in market conditions for landfill disposal. The new criteria shifts the emphasis from “justifiable demand” towards increased waste recovery and other improved environmental outcomes.

The new criteria to be applied to landfill applications include:

- Whether there is a suitable level of recovery of waste, such as by using AWT or the composting of food and garden waste, so that the amount of that waste is minimised before it is placed in the landfill.
- Whether the development:
  - Adopts best practice landfill design and operation;
  - Reduces the long term impacts of the disposal of waste, such as greenhouse gas emissions or the offsite impact of odours, by maximising landfill gas capture and energy recovery;
  - Relates to a new or expanded landfill.
- Whether the land on which the development is located is degraded land such as a disused mine site.
- Whether the development is located so as to avoid land use conflicts, including whether it is consistent with any regional planning strategies or locational principles included in the publication WIS Guideline: Landfilling as in force from time to time.
- Whether transport links to the landfill are optimised to reduce the environmental and social impacts associated with transporting waste to the landfill.

### 3.2.9 Waste Less Recycle More Initiative

The Waste Less Recycle More (WLRM) grant program provides funding for organisations to improve their management of waste and recovery of resources. The program is a 5-year $465.7 million initiative instigated by the NSW EPA and OEH to bring about economic, employment and environmental benefits (EPA, 2013b). The State of NSW has made progress in diverting waste from landfill, achieving a rise from a 45% rate of diversion in 2002/3 to 63% in 2010/11. However, in that period, the total amount of waste produced by the State has increased significantly and is set to continue increasing in the future (EPA, 2013b). The WLRM initiative focused on funding new, large-scale waste and recycling infrastructure, recycling facility upgrades, drop off centres, food and garden organics processing and recycling innovations (EPA, 2013b). As of July 2016 the waste levy-funded WLRM initiative has awarded $292.3 million to 822 projects, aiming to process 2,230,167 tonnes more waste and create 845 jobs.

Although phase 1 of WLRM is scheduled to conclude in June 2017, the EPA recently announced that there will be a second WLRM program, which is scheduled to commence in 1 July 2017 and award $337 million over 4 years. Priorities have already been outlined with a number of funding areas being potentially relevant to Council:

- local government waste and resource recovery – $70 million;
- illegal dumping prevention and waste enforcement – $65 million;
- household problem wastes – $57 million;
- waste and recycling infrastructure – $48 million;

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- organics infrastructure – $35.5 million;
- litter prevention and enforcement – $30 million;
- business recycling – $22.5 million;
- recycling innovation – $5 million; and

In 2014, three local consultants were recipients of funding to conduct Bin Trim assessments in the Port Macquarie-Hastings Council region. The Bin Trim Business Grants program is funded by the Environment Protection Authority (EPA) and involves waste assessments for small and medium-sized businesses. The Bin Trim program undertakes free assessments, tailored action plans and provide support to businesses to reduce waste and increase recycling.

Businesses assessed by an EPA-funded Bin Trim assessor may be eligible for a rebate to help with the cost of recycling equipment. While ongoing funding for the scheme is guaranteed, Council could consider funding a similar scheme.

3.2.10 Local Government Act 1993
The Local Government Act 1993 requires all councils in NSW to provide a residential waste collection service. In addition, councils must also promote a more responsible, sustainable and integrated approach to waste management including the provision of education to residents, businesses and developers, other waste management services, waste and related policy and law enforcement.

Local government’s responsibilities in Australia generally extend no further than MSW. Local government has little or no regulatory control over waste generated from C&I sources. Councils cannot compel businesses to recycle or direct them to take their waste to a particular location or dispose of it in a particular way. However, as the owners of the majority of landfills in Australia, councils can drive reform via their landfill pricing and waste acceptance/rejection policies. Businesses are not required to report any waste information to governments at any level (GHD, 2010).

3.2.11 NSW 2021: A Plan to Make NSW Number One
NSW 2021: A Plan to Make NSW Number One (NSW 2021 Plan) (2011) is the NSW Government’s strategic business plan, outlining priority actions for NSW.

Goal 22 is to ‘Protect our Natural Environment’, which includes the protection of local environments from pollution by targeting illegal dumping. A target has been set for the reduction of illegal dumping incidents by 30% by 2016.

Goal 23 of NSW 2021 is to ‘increase opportunities for people to look after their own neighbourhoods and environments’. Targets of this goal include: increasing recycling rates to meet NSW WARR targets; turning waste into a valuable resource; and achieving the lowest litter count per capita in Australia.

3.3 Additional Considerations
3.3.1 Container Deposit Legislation
The introduction and infrastructure of the proposed container deposit legislation (CDL) scheme in NSW by December 2017 is largely beyond the influence of PMHC, however a CDL scheme will likely have the following impacts:
1. The weight of the dry recycling bin will decrease (as containers are transported to a depot directly by residents and community organisations). These containers can be defined as responsive containers (i.e. they have responded to the CDL scheme).

2. However, some containers will remain in the kerbside bin as the householder may not value the financial incentive to return the containers to a depot. These containers are defined as non-responsive containers.

3. The commodity value of the responsive containers (in the form of steel, glass and plastic) is lost to the MRF (and ultimately Council).

4. However, the deposit value of the non-responsive containers (10c/unit), greatly outweighs the commodity value lost to the responsive containers.

5. The average value of dry recyclables ($/t) thus increases. This increase in value of the recyclables in the bin is greater than the drop in tonnes, therefore councils are always financially better off in the long term. It is anticipated that the majority (if not all) of this additional CDL value will flow back to PMHC in a competitive market.

The introduction of CDL in NSW will present other opportunities to PMHC, including additional space within the recycling bin. Options to further improve resource recovery rates could include the introduction of soft plastics, single use plastic bags, pre-formed polystyrene and pots and pans into the kerbside system. Any changes to the acceptability of materials in the kerbside recycling bin will likely result in a contractual variation between PMHC and its waste service provider at the time, or should be included in upcoming tender specifications. However, as container deposit legislation will be implemented in December 2017 and will result in additional capacity in the recycling bin, it is possible that Council will not require as many 360L bins for its community. It is recommended that Council monitor the need for 360L bins and adjust its policy and pricing to reflect any changes that occur over time.

3.3.2 Landfill Bans and Levies

Local, State and Federal governments have three mechanisms to drive waste reform:

1. Regulatory (e.g. enforcement, bans, Producer Responsibility etc.)
2. Pricing (e.g. levies and grants); and
3. Education (however, education’s effectiveness is limited when it runs counter to market price signals).

The NSW Landfill Levy has shown that using landfill levies as a price signal and a source of funding for resource recovery is a successful strategy, but it is not the only mechanism. However, in the absence of a price signal, most other efforts are less effective.

PMHC already pays a landfill levy of $76.70/t of waste landfilled to the NSW State Government. While future increases have not been flagged (excluding CPI adjustments), it is unlikely that the levy will be removed. If it is uneconomic to divert waste under the current pricing structure, PMHC has the option to:

1. Increase the total cost of landfill to drive recovery (essentially implementing a PMHC specific levy); and/or
2. Ban waste streams from landfill.
While pricing allows for the market to adjust, bans are typically black and white and usually require a phased approach to allow businesses to modify their practices to reflect the regulatory change.

3.3.3 Rebates
Rebates for recyclable materials (as compared to commodity prices) are typically used to reward recycling activities by offering cost reductions or buying the product from the generator. Only products with inherent value (such as paper/cardboard and metals) have sufficient value to warrant a rebate, without increasing the cost of waste disposal.

It is recommended that PMHC review its gate fee pricing to reduce the cost of disposing of clean, source separated recyclable products for its residents and local commercial clients, compared to mixed general waste products. For example, PMHC can offer a rebate for loads consisting of source separated, high quality recyclables such as paper/cardboard, metals and plastics while charge a higher price for loads that are mixed. The pricing structure should be reviewed regularly to ensure that the revenue is sufficient to cover the true costs of recycling and/or landfilling.

3.4 MIDWASTE Regional Waste Avoidance and Resource Recovery Strategy 2014 – 2021
Council is a member of the MIDWASTE forum, which is comprised of representatives of five (5) member councils located on the Mid North Coast of NSW. The other member councils of MIDWASTE are:

- Coffs Harbour City Council;
- Bellingen Shire Council;
- Nambucca Shire Council;
- Kempsey Shire Council; and
- MidCoast Council.

The focus of MIDWASTE is on regional co-operation in waste management and minimisation, and its regional programs are guided by a rolling Regional Waste Avoidance and Resource Recovery Strategy designed to provide a link between the member councils’ individual waste strategies and the NSW WARR Strategy. The current MIDWASTE Regional Waste Avoidance and Resource Recovery Strategy 2014 – 2021 (the Regional WARR Strategy), is therefore consistent with the NSW WARR Strategy and its associated targets.

For more information about the vision, result areas, and targets of the Regional WARR Strategy, please refer to Appendix C of the Background Report.
4. Where Are We Now

4.1 Residential Waste and Resource Recovery

Council is offering both residential and commercial waste collection services with residents currently having access to a garbage bin, a comingled recycling bin and a food and garden organics (FOGO) bin.

Council also provides opportunities for the recovery or safe disposal for a range of other materials through its transfer stations and Community Recycling Centre (CRC). Such items include:

- Bulky goods;
- Scrap metal;
- E-waste;
- Sharps; and
- Household hazardous waste (HHW).

Combined with targeted education and information campaigns, these services aim to reduce kerbside bin contamination, reduce the prevalence of illegal dumping and increase the overall resource recovery rate.

4.1.1 Resident Kerbside Collection System

Waste is collected at the kerbside via mobile garbage bins (MGB). Council caters to the different needs of households by providing a number of bin sizes and pick up frequency options for the collection of garbage (red lid bin) and recycling (yellow lid bin) while for FOGO collection is via a 240L green lid bin collected weekly (Table 1).

Table 1 Different kerbside bin services available for households

<table>
<thead>
<tr>
<th>Service</th>
<th>MGB size (L)</th>
<th>Collection frequency</th>
<th># of services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage - Minimiser</td>
<td>140</td>
<td>Fortnightly</td>
<td>10,139</td>
</tr>
<tr>
<td>Garbage - Special Weekly (medical needs)</td>
<td>140</td>
<td>Weekly</td>
<td>20</td>
</tr>
<tr>
<td>Garbage - Standard</td>
<td>240</td>
<td>Fortnightly</td>
<td>15,721</td>
</tr>
<tr>
<td>Garbage - Excess</td>
<td>240</td>
<td>Weekly</td>
<td>1,474</td>
</tr>
<tr>
<td>FOGO - Standard</td>
<td>240</td>
<td>Fortnightly</td>
<td>26,045</td>
</tr>
<tr>
<td>Recycling - Standard</td>
<td>240</td>
<td>Fortnightly</td>
<td>15,148</td>
</tr>
<tr>
<td>Recycling - 360</td>
<td>360</td>
<td>Fortnightly</td>
<td>12,052</td>
</tr>
</tbody>
</table>

Under the current service contract, FOGO is collected weekly while comingled recycling and garbage are collected on alternating fortights or weekly if chosen, but this service is more expensive. Council also supplies residents with a food waste kitchen caddy and compostable starch liners for inside the home.

4.1.2 Residential Waste Generation Trends

4.1.2.1 Household kerbside waste

Overall, in 2014/15 31,438 tonnes of waste and recyclables were collected at the kerbside. Despite the increase in population, over the past four (4) years the total quantity of waste collected annually in PMHC has remained relatively constant. However, as shown in Figure 6 Annual kerbside generation per waste
stream, the amount of garbage has decreased noticeably while FOGO has increased. Key trends in kerbside waste include:

- Total tonnes of waste collected from households has decreased by 1% since 2011;
- Collected garbage has decreased;
- Organic waste has increased since 2011 due to the inclusion of food organics; and
- Commingled recycling collected has remained relatively steady.

4.1.2.2 Total domestic
Council also collects and recovers ‘other’ materials (excluding mattresses), at its transfer stations and through its on-call bulky waste collection service, available to all residents for a fee. Total domestic waste generation, which was 35,490 tonnes in 2014/15 has remained relatively steady since 2011 (Figure 7).
4.1.3 Kerbside Bin Composition
Understanding waste composition is essential to manage waste as it allows for the evaluation of current systems and the planning of future infrastructure and service options. In 2015, with assistance from an Environmental Trust grant and Midwaste, Council conducted audits of all three kerbside bins.

4.1.3.1 Garbage

Figure 8 Composition of MSW bin (by weight)\(^4\)

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\(^4\) Potentially recyclable includes items that are potentially recyclable at PMHC’s transfer stations but not accepted through the kerbside comingled recycling bin.
The audit identified significant recyclables leakage into the garbage bin with 43% of the bin made up of material that should have been placed in the FOGO bin (1% of the garbage bin was food already in a biobag and 25% was loose food waste) and a further 19% was dry recyclables that could have been placed in the recycling bin (Figure 9). A 4% component of the bin is made up of material that is potentially recyclable if taken to a transfer station. There is also a small percentage of hazardous waste and e-waste in the garbage MGB. This material should have not been disposed of through the kerbside bin system.

4.1.3.2 Comingled recycling

Comingled recycling (rigid plastic containers 1-7, paper and cardboard, steel cans, aluminium cans and glass) collected at the kerbside is currently processed at the Cairncross Materials Recovery Facility (MRF), operated by JR Richards. Any other materials are considered ‘contamination’ which should not have been placed in the recycling bin. Contaminants, comprising a relatively low 6% of the recycling stream (Figure 9), are screened out at the MRF and sent to landfill. In addition to contaminants, bagged recyclables are occasionally found in recycling bins. These are treated as contamination as they cannot be recovered by the system.

4.1.3.3 Food and garden organics (FOGO)

FOGO collected at the kerbside is processed into compost at the Remondis Organics Resource Recovery Facility (ORRF). Contamination is generally very low, at 2% (Figure 10).

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5 Includes batteries, chemicals and light bulbs  
6 End of life waste, such as computers and televisions
4.1.4 Kerbside Diversion Rate

Overall, in 2014/15, of the 35,490 tonnes of waste generated, approximately 20,583 tonnes were recovered. This translates to a kerbside recovery rate of approximately 58% (Figure 11). This is 12% lower than the NSW target of 70% diversion by 2021 but compared to the current NSW and Midwaste averages is relatively high and just 2% from the current Midwaste target of 60% diversion.

Figure 11 PMHC domestic diversion rate
4.2 Commercial Waste

In addition to the services provided to households, Council and local waste contractors also collect commercial waste. Waste landfilled at Cairncross varies from year to year. In 2014/15 15,186 tonnes of waste was collected from businesses and landfilled at Cairncross landfill (Figure 12).

Figure 12 Commercial waste landfilled at Cairncross landfill 2011-2015

The Council provided commercial garbage collection service (for eligible commercial operations) is weekly and offers three options detailed in Table 2.

Table 2 Commercial waste services (garbage only)

<table>
<thead>
<tr>
<th>Service</th>
<th>MGB size (L)</th>
<th>Collection frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Weekly</td>
<td>140</td>
<td>Weekly</td>
</tr>
<tr>
<td>Commercial Excess</td>
<td>240</td>
<td>Weekly</td>
</tr>
<tr>
<td>Commercial Additional</td>
<td>240</td>
<td>Weekly</td>
</tr>
</tbody>
</table>


The previous *WRM Strategy* has steered Council in providing the community with exemplary waste management services that have encouraged waste minimisation and improvement in the recovery and re-use of resources. The previous Strategy’s overriding objectives were:

i. Continuing to develop the efficiency of waste management in Port Macquarie-Hastings;

ii. Adopting the NSW Targets as a requirement based on principles of sustainability;

iii. The need to prepare strategic directions to guide service contracts;

iv. Minimising risk to Council through best practice waste management and compliance;

v. Optimising opportunities;

vi. Achieving value for money; and

vii. Encouraging community participation and ownership.
The work programs focussed on MSW, C&I and C&D waste streams, and on issues and opportunities associated with Council’s own waste management responsibilities, and Council’s waste assets and infrastructure. Within these work programs actions were directed towards the following focus areas:

- Possibilities for sustainability improvements;
- Food waste diversion;
- Improving commercial participation in waste diversion;
- Construction and demolition waste disposal and recycling options;
- Opportunities for Council controlled operations and Council generated waste;
- Strategic considerations for Council’s waste assets and infrastructure;
- Waste education; and
- Corporate responsibility and compliance.

4.3.1 Achievements

A substantial amount of work has been undertaken in delivering the programs identified in the previous WRM Strategy, with high corporate risk initiatives such as renewal of major contracts being a key focus area. Appendix A of the Background Report presents the programs under the existing Strategy and identifies the progress made in achieving their delivery.

A number of significant achievements, listed below, were accomplished during the existing WRM Strategy period while other projects and initiatives, identified in Section 6 were either not fully implemented, or are ongoing, and should carry through. Achievements that will influence and guide the development of the new Waste Strategy include:

- Planning, procurement and commencement (on 1 September 2014) of a new kerbside waste, resource and recycling collection contract. The contract provides for:
  - Expanded compulsory domestic FOGO collection service – supported by the NSW EPA under the Waste Less Recycle More (WLRM) Local Government Organics Collection Systems Program;
  - Weekly and fortnightly options for the collection of either a 140 L or 240 L residual waste MGB – 96% of the community have elected to receive a fortnightly collection;
  - Fortnightly collection of either a 240 L or 360 L recyclables MGB – 47% of the community have elected to receive the 360 L option;
  - User pays on call bulky waste collection service with metal recovery; and
  - Opportunity for small businesses to use the domestic collection service.

- Targeted education and communications campaigns for the introduction of the new collection services, including:
  - Educational videos for the three bins, and illegal dumping providing helpful hints and a behind-the-scenes look at what happens to each stream when it leaves the kerb and is processed; and
  - Extra Recycling Collection over Christmas where local residents were encouraged to recycle as much household waste as possible over the festive season.
• Planning for, and commencement of, the consolidation of Council’s waste management infrastructure and assets, including:
  
  o Further consolidation of the central waste management facility at Cairncross, through:
    - Planning, procurement and commencement (1 September 2014) of a new contract for the operation of Council’s Organics Resource Recovery Facility;
    - Planning for the long term expansion of the landfill and commencement of the preparation of an Environmental Impact Statement to accompany an eventual Development Application; and
    - Planning for, and commencement of, the establishment of a resource recovery precinct.
  
  o Upgrade of the Port Macquarie Waste Management Facility to incorporate a Community Recycling Centre for the collection of household problem wastes – supported by funding from the NSW EPA under the WLRM Community Recycling Centre Program;
  
  o Retrofit viability and options assessment for the Port Macquarie Waste Management Facility. The outcomes of the assessment informed a subsequent application for grant funds under the NSW EPA’s WLRM Resource Recovery Facility Expansion and Enhancement Program for the expansion of the transfer station and development of a buy-back centre;
  
  o Planning for the movement of the concrete crushing and oil recycling activities from the Port Macquarie Waste Management Facility to the CWMF Resource Recovery Precinct;
  
  o Planning for, and commencement of, closure and capping activities at the Dunbogan landfill – supported by funding from the NSW EPA under the WLRM Landfill Consolidation program;
  
  o Planning for, and commencement of, the development of a transfer station (TS) at Kew – supported by funding from the NSW EPA under the WLRM Environmental Improvement program;
  
• Installation of public place recycling bins in Port Macquarie and Wauchope.

4.4 Waste Facilities

Council is responsible for the management and operation of a number of waste management and resource recovery facilities covering a wide gamut of operational functions. The facilities provide a direct interface with Council’s customers, contractor’s and service providers and their management requires skills in infrastructure planning, asset management, in-house operations/staff supervision, administration and control of operational contracts, customer service and complaint management.

A critical element of the Waste Strategy is the need to present a coherent and comprehensive approach for the consolidation and development of waste and resource recovery infrastructure based on present and future needs and potential infrastructure capacity gaps. The Waste Strategy has assessed the situation to date with both the Cairncross Waste Management Facility (CWMF) and other infrastructure to consolidate existing and planned initiatives and assess the implications and opportunities for Council to plan and deliver requisite infrastructure and assets to cater for the future needs of the community. For full analysis of both
CWMF infrastructure options and other waste asset options please see Appendix B and Appendix C of the Background Report. The following facilities are owned by PMHC:

i. CWMF;
ii. Port Macquarie (Kingfisher) Transfer Station;
iii. Wauchope Transfer Station;
iv. Comboyne Transfer Station;
v. Dunbogan Landfill; and
vi. Kew Transfer Station (commenced construction)

Generally all facilities are performing well and have development plans (where relevant) well in hand. The CWMF (landfill) requires significant expansion in the coming years and this is discussed below in more detail.

4.4.1 Cairncross Waste Management Facility

The CWMF is located at 7395 Pacific Highway, Telegraph Point. The site covers an area of 143.8ha, and is bounded by Cairncross State Forest to the north, east and south, a National Park Reserve to the south-east; and Pembroke Road to the west. It commenced operation in October 2001 and is Council’s key solid waste management facility. The CWMF has been progressively developed and expanded upon and provides for a multi-functional operation, including:

- Collection area with weighbridge;
- Landfill;
- ORRF;
- MRF;
- Transfer Station;
- Gas bottle recycling centre;
- Planned resource recovery precinct
- Water supply dam;
- Other site infrastructure (including office and staff amenities), and
- Planned sewage treatment plant.

Importantly, the CWMF was planned with a strategic vision for it to be Council’s long term central waste and resource management hub. The strategic nature of the site’s planning, design and development has provided for the establishment of the aforementioned operations, as well as for the planned progressive expansion of the landfill component of the CWMF to eventually consist of four (4) cells whilst maintaining over 55ha as landfill buffer and to provide compensatory habitat.

4.4.1.1 CWMF Landfill

Waste disposed to the landfill is delivered from the following sources:

- Domestic kerbside collection – Residual waste red bin;
- Commercial kerbside collection – Mixed waste red bin;
- C&I – self-hauled (unsorted);
- C&D – self-hauled (unsorted);
- ORRF residual;
• MRF residual; and
• Mixed waste – bulk hauled (unsorted) from Port Macquarie (Kingfisher), Wauchope, and Comboyne Transfer Stations.

The operation of the landfill is managed by Council staff and is guided by Council’s 2008 Operational Environmental Management Plan. A Pollution Incident Response Management Plan is also in place to deal with operational incidents and emergencies. The existing cell is estimated to reach capacity in 20207.

4.5 Waste Contracts

Council has entered into a variety of contracts of varying complexity and value with the private sector for the collection, processing and disposal of materials, including kerbside services. Table 7 in Appendix B of the Background Report provides an overview of all waste management and resource recovery contracts currently under Council’s administration along with an assessment of the implications and opportunities associated with these contracts.

4.6 Community Attitudes to Waste Management and Recycling

A community survey was conducted in August 2013 to assess community behaviours and attitudes to waste management and to assess the response to potential service change options to follow in 2014. The survey showed community support for the new systems and guided their successful implementation.

A community response survey following the ‘Choose your bin’ campaign took place in April 2015. Results projected that 42% of residents selected to reduce the size of their red bins, and 56% chose to increase the size of their yellow bins. In addition, 93% of residents opted to reduce the frequency of their waste collection by switching to fortnightly collection. A large majority of residents were satisfied with Council’s waste services, as 87% reported no problems with changes to the new waste system8. The most common reason provided for supporting this change was for ‘environmental benefits’, further highlighting the community’s positive attitude towards waste management. Media data also suggests a rise in waste related interest from the community following the initial education campaign, including council webpage hits, activity on social media and telephone enquiries.

Residents communicated that they needed more information on waste sorting for each of the bins provided by Council, in regard to the changing bin systems. In response, Council has released media campaigns, introduced educational programs in schools and distributed informative brochures via the website and Facebook to ensure a majority of the community is aware of the services that PMHC offers.

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7 Arcadis Consulting, Cairncross Landfill Expansion – Future Disposal Capacity Requirements
8 PMHC-Choose Your Bin and New Service Survey, Micromex research 2015
5. Where Do We Want To Get To

5.1 Strategy Vision

Council’s integrated planning and reporting framework details that by 2030 the people of the LGA will be:

- Living in a harmonious safe and connected community;
- Enjoying participatory local democracy;
- Accessing quality infrastructure including roads, waste, water and sewerage management;
- Benefiting from quality urban design that encourages use of open spaces and provides easy access between our towns and villages;
- Enjoying economic prosperity and having access to quality education and training;
- Actively participating in inclusive community activities; and
- Preserving and protecting our natural habitats.9

This overarching vision drives Council’s 2030 Community Strategic Plan (CSP), which details the community’s aspirations for strategic objectives such as social, economic, environmental, and civic leadership.

Council’s approach to long term strategic planning is based on the integration of Council’s CSP with its four-year Delivery Program and Council’s annual Operational Plan.

Together, the portfolio of strategies and plans provide the pathway for the continued transformation of the region to achieve the 2030 vision.

5.2 High Level Objectives/Strategic Outcomes

The high level strategic outcomes, are that the Waste Strategy will:

- Cover a eight (8) year period from 2017 until 2024 (NB: 2024 aligns with the current Cairncross landfill approval);
- Ensure consistency with Council’s environmental, economic, and social policies and the 2030 Community Strategic Plan;
- Align with the objectives and targets of the NSW WARR Strategy;
- Be consistent with, and leverage the Regional WARR Strategy programs over the same time period;
- Focus on the delivery of safe, cost effective, innovative and convenient waste management services for Council’s customers and workers;
- Consider best available waste management technologies and delivery methods (wherever possible) appropriate to Council’s local circumstances, building upon successes to date;
- Embody flexibility as a key, providing Council with a tool to readily adapt by maximising opportunities and minimising risks associated with emerging technological, financial, social and legislative contexts; and
- Acknowledge, and build upon, the success of a single landfill and central waste and resource management hub at the Cairncross Waste Management Facility (CWMF), facilitating:

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9 To be updated following adoption of revised CSP in 2017
5.3 Guiding Delivery Principles/Strategic Focus Areas

The guiding delivery principles, or strategic focus areas, used to inform the Waste Strategy’s delivery mechanisms are as follows:

- Council to actively pursue planning approval for the expansion of its primary landfill at the CWMF, to ensure long term capacity for the disposal of residual MSW, C&D and C&I waste;
- Opportunities for the re-use, recycling and recovery of material from MSW, C&D and C&I waste streams are of high priority and are to be maximised prior to disposal of residual waste to landfill;
- Waste management facilities and infrastructure are planned, designed and operated in accordance with industry best practice, where possible, to efficiently and sustainably manage current and future waste flows;
- Management of waste and resource recovery facilities, operations and activities complies with all statutory requirements and strives for improved environmental performance;
- Waste, resource and recycling collection services are efficient, provide value-for-money, and have minimal environmental impact;
- The community is engaged in sustainable waste management practices and activities facilitated by the acquisition of the necessary knowledge, skills, attitudes and values;
- The natural environment is protected through the reduction of littering and illegal dumping;
- Regional collaboration and partnerships with other stakeholders and organisations is encouraged to foster the sharing of resources and knowledge, the development of innovative waste management solutions, and to take advantage of economies of scale;
- Sound governance is employed in all Council decisions relating to waste management;
- The business of waste is managed systematically to ensure effective and efficient administration and improved customer service; and
- Consideration to be given to the resourcing necessary to deliver strategy outcomes.
6. How Will We Get There

6.1 Building Upon the Previous Waste Strategy

Whilst a substantial amount of work was undertaken under the previous WRM Strategy there are a number of identified actions (projects and initiatives) that were not fully implemented as a result of conflicting priorities or resource constraints. Table 6 includes these projects and initiatives that should be considered in the new Strategy.

6.1.1 Projects and Education Initiatives Carrying Through

PMHC carried out a range of education initiatives and programs as part of the ‘Choose your Bin’ campaign. Table 3 shows a summary of successful recent projects and education initiatives that should continue under the new Waste Strategy.

Table 3: PMHC projects and education initiatives 2013-2015

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Waste Education Campaign</td>
<td>● Mail notifications and brochures delivered to landowners and tenants</td>
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<tr>
<td></td>
<td>● Brochures including ‘Your Bin Guide’ and ‘Three easy steps’ delivered to residents</td>
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<td></td>
<td>● Council put in place several measures to assist residents with the transition to the fortnightly red rubbish collection, including a free recycling upgrade, kitchen bins for households, choice of bin service frequency, and tip vouchers</td>
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<tr>
<td></td>
<td>● Free upgrade to 360L Recycling Bin;</td>
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<td></td>
<td>● Reduce size of Red Bin to 120L; and</td>
</tr>
<tr>
<td></td>
<td>● Fortnightly collection for Red Bin</td>
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<td></td>
<td>● Online videos (green, red and yellow bin educational videos ‘Let's get waste sorted’) plus, illegal dumping video</td>
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<tr>
<td></td>
<td>● TV and radio advertisements</td>
</tr>
<tr>
<td></td>
<td>● Social media</td>
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<tr>
<td></td>
<td>● Council communications and library displays</td>
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<tr>
<td></td>
<td>● Council has organised media campaigns to educate the community including;</td>
</tr>
<tr>
<td>Media Campaigns</td>
<td>● Funding from the NSW EPA was used to upgrade the Port Macquarie Waste Management Facility (Kingfisher Road) as a part of the Community Recycling Centre Program</td>
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<tr>
<td></td>
<td>● The program also aims to increase community awareness of household waste management and recycling</td>
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<tr>
<td>PMWMF and Community Recycling Centre</td>
<td>● Personalised bin collection calendar</td>
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<td></td>
<td>● Guide to three bin system and kitchen bin</td>
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<td></td>
<td>● A-Z list of waste materials showing which bin they belong to</td>
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<tr>
<td></td>
<td>● Hints and tips to help with waste management</td>
</tr>
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<td></td>
<td>● Information about Council’s services and waste facilities</td>
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<td></td>
<td>● ‘Report a problem’ form allowing you to send feedback direct to Council</td>
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<tr>
<td>Wastelnfo Phone App</td>
<td>●</td>
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Port Macquarie-Hastings Council Waste Strategy
### Initiative

<table>
<thead>
<tr>
<th>Other</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Schools education program</td>
<td>Environmental education programs for school and community (to continue in 2016)</td>
</tr>
<tr>
<td>MUDs case study</td>
<td>Additionally, a MUDS program was carried out for 40 properties (similar to Bin Trim)</td>
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<tr>
<td>Community group presentation</td>
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</table>

## 6.2 Future Planning for Waste Infrastructure

At current waste generation rates, Council may be without disposal capacity by approximately 2020, presenting significant financial and operational corporate risks. In order to mitigate these risks Council has embarked on a planning process to secure access to additional waste disposal capacity to meet its future needs. This includes:

1. A long term plan for the Cairncross landfill; and
2. A systematic planning process to seek approval for the Cairncross landfill’s expansion, which to date has included:
   - A Preliminary Environmental Assessment;
   - Obtaining the General Secretary’s Environmental Assessment Requirements; and
   - Engaging Arcadis Consulting to prepare an Environmental Impact Statement (EIS) under Part 4 of the *Environmental Planning and Assessment Act 1979* for the expansion of the existing landfill by the addition of 3 new cells covering a total additional area of approximately 32.7ha.

Associated with the preparation of the EIS, Arcadis has conducted a modelling exercise involving a number of scenarios and waste generation growth rates in order to show the range of filling rate possibilities for the proposed landfill expansion. Scenarios were modelled against the design capacity of the future landfill stages, in order to estimate the volume and tonnage capacity of the new stages (Table 4).

<table>
<thead>
<tr>
<th>Stage</th>
<th>Estimated Volume (m³)</th>
<th>Estimated Tonnage Capacity (t)</th>
<th>Years to consume</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1,610,181</td>
<td>1,231,789</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1,016,705</td>
<td>777,779</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1,541,718</td>
<td>1,179,414</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,148,673</td>
<td>4,376,372</td>
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</table>

The most likely scenarios that were modelled indicate that the proposed landfill expansion would result in an additional 30-31 years of capacity from the commencement of operation. Should the most likely scenario of 30 years manifest, PMHC will need to commence investigations to expand the Cairncross landfill further allowing sufficient time to acquire land and seek the necessary approvals.

### 6.2.1 Infrastructure SEPP - Opportunities

Council’s position regarding the recovery of waste prior to landfiling is strong given the existence of the Remondis operated ORRF, which processes the domestic kerbside collected FOGO stream and the garden waste delivered from its transfer stations, and the MRF and various drop off streams. This demonstrates
Council’s commitment to recovery. However, Council will need to introduce additional initiatives and projects on top of FOGO processing, to increase diversion rates beyond what it is currently achieving.

To that effect it is recommended that Council pursue the following opportunities and initiatives:

- Adoption of the recycling and diversion rate objectives and targets set out in the WARR Strategy and Regional WARR Strategy;
- Adoption of the waste generation per capita objective and target set out in the WARR Strategy and Regional WARR Strategy;
- Undertake a feasibility study for the introduction of a “Dirty MRF” upstream of the landfill for the recovery of resources from the incoming unsorted C&I and C&D waste streams;
- Investigate the feasibility of introducing landfill disposal bans on materials that could otherwise be recovered as resources (e.g. concrete, cardboard, tyres, garden waste, wood, etc.);
- Investigate the feasibility of introducing differential gate fees for C&I and C&D waste to encourage delivery of source separated material as opposed to mixed loads;
- Revise the adequacy of the existing Development Control Plan (DCP) with respect to the appropriateness of the included provisions for MUDS and events;
- Investigate the feasibility of introducing:
  - a specific service for commercial food businesses using a dedicated waste collection compaction vehicle; and/or
  - multiple “shared recycling collection points” system with small scale organics processing facility, e.g. the Degraves St. model introduced in the City of Melbourne (refer to Appendix D of the Background Report for more information); and/or
  - an extension of the MSW organics collection service; and
- Continue to deliver a comprehensive Community Engagement and Education Strategy.

6.2.2  Best Practice Landfill Environmental Standards – Opportunities

The NSW Department of Planning and Environment’s and the EPA have concerns in approving the long planning timeframes of the landfill. Resource recovery is the preferred option to landfill disposal. DoPE are concerned that long term approvals may discourage best practice resource recovery.

However, these concerns can be addressed if certain conditions of consent are included in the approval of the expanded landfill. In this regard, Arcadis has recommended, and MRA agrees with, the application of the following condition of consent:

“Twelve months prior to the proposed commencement of each additional cell, Council will provide the Department of Planning and Environment and the Environmental Protection Authority an independent review of Council’s waste management performance and any recommendations for waste management improvement against the NSW Waste Avoidance and Resource Recovery Strategy. The review will also consider the latest edition of Environmental Guidelines for solid waste landfills (or equivalent) and demonstrate how construction and operation of the new cell would comply with the minimum standards.”

There are additional opportunities for other transfer stations in the LGA but in order to emphasise the importance of increasing recovery to support the preparation of the EIS, the focus of this report is the landfill.

6.2.3  CWMF Infrastructure Options Analysis and Recommendations
As a part of the development of this Strategy, MRA conducted a preliminary options analysis for a number of infrastructure scenarios at CWMF. The recommendations resulting from the analysis are detailed below.

1. When the MRF tender expires, consider retendering the MRF operations or issuing an expression of interest (EOI) to market, requesting pricing for:
   a. Non-refurbished facility;
   b. Refurbished facility; and
   c. Both of the above with the inclusion of CDL.

This will ensure that PMHC can quantify if it will receive a return on investment to refurbish the facility and if the closure of the facility is cost effective.

2. Verify assumptions regarding C&D (concrete crushing) including capital cost of equipment and infrastructure, operating costs and aggregate value.

3. Perform a detailed business case prior to commissioning a C&I recycling facility, utilising accurate C&I audit data.

4. Consider conducting an audit to determine the actual quantity of EPS entering the landfill.

5. Consider establishing an EPS recycling facility using all available data.

6. Consider conducting a detailed valuation study to determine the true cost of landfilling to PMHC.

7. Determine if there are any third party mattress recycling companies interested in using the existing building on the site at Kingfisher. This can be achieved by releasing an EOI to the market for the recycling of mattresses.

For further information and full analysis please see Appendix B of the Background Report.

### 6.2.4 Other Waste Asset Infrastructure Options Analysis and Recommendations

Following consultation with Council, MRA prepared preliminary business cases to quantify the cost implications of modifying waste asset infrastructure and/or the contracts associated with the management of this infrastructure.

PMHC identified the following preliminary businesses cases of interest:

1. Commingled recycling Material Recovery Facility (MRF), considering:
   a. Business as usual operations;
   b. Refurbish the MRF at a cost of $5,500,000 to improve efficiency prior to re-tender; and
   c. Close the MRF, lease the land to a third party and haul recyclables to the Tuncurry MRF.

2. Establishment of a regional construction and demolition waste (C&D) recycling facility at Cairncross (considering the implications of varying aggregate values and OPEX estimates).

3. Establishment of a regional commercial and industrial waste (C&I) recycling facility (“dirty MRF”) at Cairncross.

4. Establishment of an expanded polystyrene (EPS) recycling system at Kingfisher Road.

5. Establishment of a mattress recycling facility at Cairncross or Kingfisher Road, considering:
   a. Business as usual operations (offsite processing by a third party);
   b. Onsite processing by a third party; and
c. Onsite processing by PMHC.

For more information on the methodology and results of the establishments, please refer to Appendix B of the Background Report.

6.3 Waste Contract Implications and Opportunities

Council controls and administers numerous contracts to fulfil its waste manage and resource recovery operational function. There is considerable variation in the scale, complexity, timeframes, and administrative requirements associated with these contracts. If appropriate contract management protocols and processes are not designed and applied then the control and administration of these contracts can become unwieldy and ad hoc, resulting in the potential for realised risks associated with financial, environmental and work health and safety elements.

6.3.1 General Opportunities

In 2016 PMHC undertook an internal audit of contract management generally and recommendations from this audit will guide waste’s contract management more broadly.

Following the findings of the audit review, it is recommended Council seek to introduce Contract Management software, for example Open Windows, to allow a consistent approach over all of PMHC.

6.3.2 Specific Opportunities

In consideration of the information included in Appendix B of the Background Report, Council should pursue the following opportunities and initiatives:

6.3.2.1 Operation of the ORRF
- Approach KSC and other neighbouring councils when necessary to negotiate regarding the continuance, or revision and renewal, of the Memorandum of Agreement (MOA) for the acceptance of its kerbside collected organics for processing at Council’s ORRF.

6.3.2.2 Operation of the MRF
- Approach KSC with a view to enter into negotiations regarding the continuance of the receipt of its commingled recyclable at Council’s MRF, and to seek information of KSC’s future intentions in this regard;
- Undertake an analysis of options for the continued operation, or otherwise, of Council’s MRF following the cessation of the existing contract.

6.3.2.3 Medical Waste Collection
- Monitor the evolution of the State Government contract and enter in a new contract with the preferred contractor subsequent to its reissue.

6.3.2.4 Green Waste Processing
- The contract has recently been extended. Suggested actions include:
  o Establish a continuing arrangement with the existing contractor; and
  o Commence the procurement process for a new contract in accordance with the provisions set out in Council’s Procurement Strategy.
6.3.2.5 **Mattress Collection and Recycling**
- Undertake an analysis of options for the processing and recycling of mattresses by Council at one of its facilities as opposed to outsourcing the service offsite via the existing contract, or re tender collections.

6.3.2.6 **Tyre Collection and Recycling**
- As there is no formal contract or agreement in place with the operator providing the service:
  - Establish a simple form interim contractual arrangement with the existing operator; and
  - Commence the procurement process for a formal contract in accordance with the provisions set out in Council’s Procurement Strategy.

6.4 **The Regional WARR Strategy and PMHC**

Aligning Council’s *Strategy* with the *Regional WARR Strategy* will ensure Council receives maximum benefit from the regional implementation program, to provide benefits such as:

- Uniformity in regional and local programs and projects;
- Resource and knowledge sharing;
- Cost advantages through economies of scale;
- Cost sharing; and
- Improved operational efficiencies and synergies.

The areas where Council is likely to obtain the greatest benefit through leveraging the *Regional WARR Strategy* are related to programs and initiatives including, but not limited to:

- Advocacy for particular policy positions;
- Research and development;
- Marketing, promotion, communications and education;
- Collaborative partnerships in areas such as training and development; and
- Collaborative partnerships and cost sharing for initiatives targeting illegal dumping and littering.

It is therefore recommended that Council pursues the following opportunities and initiatives with Midwaste subject to ongoing State Government funding of these activities:

- Support Midwaste in the development of a standardised region wide education program that integrates with a Council specific Community Engagement and Education Strategy;
- Expand and improve upon the intended behavioural change program – Love Food Hate Waste Program – with a focus on Cafes and meal events;
- Investigate options to incentivise social enterprise in the Council area that support reuse and local employment, focussing on Expanded Polystyrene (EPS), mattresses and textiles;
- Support development and implementation of collaborative partnerships and cost sharing for initiatives targeting illegal dumping and littering – including the potential for the introduction of Regional Illegal Dumping (RID) squads;
• Support development and implementation of collaborative training and development programs for operational staff;
• Participate in ongoing regional waste and resource characterisation audits;
• Participate in public place litter and recycling bin audits via the “Better Waste and Recycling Fund” Midwaste component;
• Participate in the Midwaste ReSourceful Schools program; and
• Develop and implement regional community-based projects (e.g. clothing swap events, Junk Art exhibitions, Garage Sale Trail etc.)

6.5 Emerging Waste Technologies and Trends
A review of the main Alternative Waste Treatment (AWT) technology options that may be applicable to PMHC on a number of its waste streams determined that thermal technologies are currently unsuitable for Council due to cost, risk and scale. Open Windrow, Mobile Aerated Floor (MAF) and Tunnel composting are the most suitable and most relevant for processing organic waste. Given Council’s satisfaction with the ORRF and the costs associated with these technologies, there is no current motive for Council to pursue a new AWT. It should however monitor technology developments and reassess its position as necessary- for example if affordable, local EfW becomes available.
7. How Will the Strategy Be Implemented?

The findings of The Strategy have been summarised into a list of recommended actions for Council consideration (Table 5) taking into account Council’s objective to implement best practice waste management and resource recovery services. Timeframe and cost indications are comparative estimates at this point. Detailed financial and timing information will be developed and included in individual project plans.

<table>
<thead>
<tr>
<th>Table 5 key</th>
<th>Short</th>
<th>Medium</th>
<th>Long term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeframe</td>
<td>0-3 years</td>
<td>3-5 years</td>
<td>&gt; 5 years</td>
</tr>
<tr>
<td>Cost</td>
<td>&lt;$10,000</td>
<td>$10,000 - 200,000</td>
<td>&gt; $200,000</td>
</tr>
</tbody>
</table>

Table 5 Summary of recommended actions

<table>
<thead>
<tr>
<th>Recommended actions</th>
<th>Details</th>
<th>Implementation timeframe</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Waste actions</td>
<td>Review and continue current education program and compliance recognition system for SUDs and MUDs (through strata managers). Relate to the EPA’s Bin Trim model. Audit C&amp;I loads coming into Cairncross to understand the demand for separate materials collections, such as cardboard and paper, wet and dry runs etc. and use this information to prepare education campaign targeted to SMEs. Adopt Bin Trim methodology where possible, to deliver the education strategy. Incorporate with initiatives such as Wastelnc Phone App and the Domestic Waste Campaign.</td>
<td>Short</td>
<td>Low</td>
</tr>
<tr>
<td><strong>B</strong> Continue media campaigns and education initiatives</td>
<td>Build upon and improve on current education initiatives and campaigns focusing on MUDs and school education and including provision for rural waste education. Explore options for reaching as wide an audience as possible including the use of print, online and TV/radio media. The Wastelnc Phone App and the Domestic Waste Campaign will form an integral part of the initiatives.</td>
<td>Short, ongoing</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>C</strong> Target MUD recycling</td>
<td>Recycling in MUDs is often less efficient than in SUDs with higher contamination found in bins. Review and continue existing program to improve recycling</td>
<td>Short</td>
<td>Low</td>
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<tr>
<td>Recommended actions</td>
<td>Details</td>
<td>Implementation timeframe</td>
<td>Cost</td>
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<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<td>Recommended actions</td>
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<td>J Regional Waste Projects</td>
<td>Continue to liaise with and support regional waste projects undertaken by Midwaste.</td>
<td>Ongoing</td>
<td>Low</td>
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<td><strong>Contract actions</strong></td>
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<td>A Contract Management &amp; Procurement</td>
<td>Finalise review of contract management and procurement policy across all of PMHC. Review all Waste Service ‘period’ contracts (eg Greenwaste mulching, scrap metal, medical waste collection, tyres etc) to ensure best value.</td>
<td>Short</td>
<td>Low</td>
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<tr>
<td>B Contract Management software</td>
<td>Consider Contract Management software, for example Open Windows, to allow a consistent approach in managing all ‘period’ contracts.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>Waste infrastructure and landfill actions</strong></td>
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<td>A Approval for the expansion of the Cairncross Landfill (3 new stages)</td>
<td>Ensure landfill capacity beyond 2020 through approval for the landfill’s expansion to secure long term disposal capacity (refer to Section 6.2). Ongoing creation and management of landfill cells.</td>
<td>Short - ongoing</td>
<td>High</td>
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<tr>
<td>B Increase C&amp;I disposal fees</td>
<td>Higher disposal fees for C&amp;I waste would incentivise C&amp;I recovery. Provide C&amp;I businesses and operators with recycling alternatives.</td>
<td>Low, ongoing</td>
<td>Low</td>
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<td>C Explore MRF refurbishment</td>
<td>Identify refurbishments that will allow higher resource recovery, cost reductions and capacity increase. Investigate possible grant funding. Seek more tonnes for the MRF incl. from Midwaste members. Investigate inclusion of additional recycling items including an increased range of plastics, textiles and small electrical appliances.</td>
<td>Medium</td>
<td>High</td>
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<td>D Determine the true cost of landfill</td>
<td>Pricing review for Cairncross landfill to prevent burdening future residents with unfunded landfill liabilities. A bottom up cost review can determine if the current gate fee charged by Council covers all costs associated with the landfill’s management including costs of operation, upcoming capital requirement, future rehabilitation, management and monitoring costs as well as the cost of a replacement facility.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>E</strong> Explore regional C&amp;D/C&amp;I recycling facilities</td>
<td>Determining the availability and capability of existing infrastructure in the region will allow PMHC to direct C&amp;I and C&amp;D operators to appropriate recovery facilities and also identify gaps both spatially and from a capacity perspective.</td>
<td>Long</td>
<td>High</td>
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<td><strong>F</strong> Approach other neighbouring councils to gauge ongoing interest in using ORRF and MRF</td>
<td>Securing more tonnes can reduce overall waste management costs for PMHC, facilitate and fund long term planning (e.g. MRF expansion) and contribute to a regional approach to waste management.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>G</strong> Tip Shops/Reuse Centres</td>
<td>Investigate provision of tip shops/reuse centres in conjunction with the upgrade of the Port Macquarie (Kingfisher Road) Waste Management Facility.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>Grant actions</strong></td>
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<td><strong>A</strong> Pursue infrastructure opportunities</td>
<td>PMHC will explore a number of funding opportunities including MRF expansion and the introduction of a “Dirty MRF” upstream of the landfill. The second phase of the WLRM initiative is expected to provide numerous opportunities for a range of infrastructure types and other waste management related actions.</td>
<td>Short, ongoing</td>
<td>Medium</td>
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<td><strong>B</strong> Apply for WLRM Love Food Hate Waste funding to educate residents on waste avoidance</td>
<td>Waste avoidance, with a focus on food waste will be an educational focus for PMHC. Love Food Hate Waste grants will be pursued as a funding source for the campaign.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>Other actions</strong></td>
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<td><strong>A</strong> Investigate options to participate in the Emissions Reduction Fund</td>
<td>Diversion of FOGO, biofilters, landfill phytocaps, EfW and waste avoidance projects potentially qualify under ERF. PMHC will review existing and planned projects for eligibility under the ERF.</td>
<td>Short</td>
<td>Low</td>
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<td><strong>B</strong> Monitor emerging waste management technology for possible implementation</td>
<td>AWT and EfW technology facilities operating at small scale locally could become economically viable in the future. Low risk options such windrow composting, MAF and tunnel composting could become suitable to PMHC as complimentary facilities or to replace existing assets.</td>
<td>Short, ongoing</td>
<td>Low</td>
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</table>
8. References

Australian Bureau of Statistics (2011), The Australian Census of Housing and Population
KMH Environmental (2015) Why commercial composting doesn’t have to cost the earth! Commercial Composting Facility CM.
NSW Government (2011) NSW 2021: A Plan to Make NSW Number One
NSW EPA (1979) Environmental Planning and Assessment Act (EP&A) 1979
Ricardo AEA (2013), Waste to Energy Background Paper, prepared for Zero Waste Australia
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