

# *Waste Management Strategy*

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# Waste Management Strategy

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A submission to Coonamble Shire Council

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**Mike Ritchie & Associates Pty Ltd trading as MRA Consulting Group**

ABN: 13 143 273 812

Suite 409, Henry Lawson Building

19 Roseby Street

DRUMMOYNE NSW 2047

AUSTRALIA

Phone: +61 408 663 942

Email: info@mraconsulting.com.au

www.mraconsulting.com.au

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|-----------|----------------------|
| Author:   | Roslyn Florie-George |
| Checker:  | Julien Gastaldi      |
| Approver: | Mike Ritchie         |

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## Executive Summary

### Where are we today?

Coonamble Shire Council (Council) is home to an estimated population of 4,523 residents. Council currently offers a kerbside garbage collection service to residential properties in Coonamble and Gulargambone and operates the following facilities:

- Coonamble Landfill;
- Quambone Landfill; and
- Gulargambone Transfer Station.

The Coonamble Landfill has been operational for 15 years and is expected to provide another 40 years of void space at the current site. Recycling services are primarily limited to metals in the region. Green waste is currently shredded at Coonamble Landfill and used as daily cover.

To establish a detailed understanding of current operations, desktop analysis, site inspections and site stakeholder consultation was conducted.

Council wishes to improve on its current operations through the development and implementation of a strategy.

### Where do we want to get to?

The Strategy understands that Council wishes to:

1. Implement best practice disposal and recovery options for the delivery of waste and recycling services;
2. Effectively manage local landfill facilities in an environmentally sustainable manner; and
3. Prevent and best manage illegal dumping in the region.

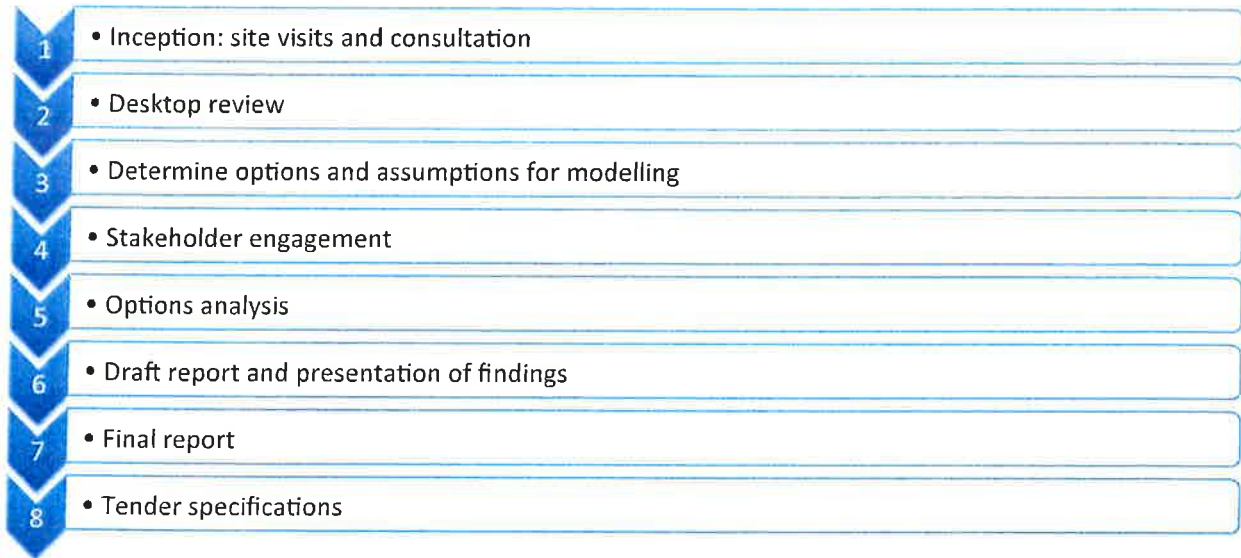
Council wishes to achieve a planned and collaborative approach to waste management, which is cost effective, supportive of the local community and economy and improves resource recovery in line with State targets.

The Strategy will inform the waste collection and processing tender specifications employed by Council to ensure that Council's subcontractors achieve best practice at each facility.

### How will we get there?

The project methodology and subsequent project plan was developed in consultation with Council (Figure 1).

Figure 1 Project methodology summary



The Strategy reviewed current landfill operations and proposed two infrastructure changes:

1. Introduce a paper/cardboard and FOGO composting system; and
2. Convert Quambone Landfill into a transfer station.

In addition to these infrastructure changes, three kerbside systems were analysed to identify the most favourable bin collection system for the region:

1. **Business as usual (BAU):** Council offers a single garbage (residual) bin collection service with all waste directed to Coonamble Landfill. This service is offered to the residents of the townships of Gulargambone and Coonamble.
2. **Introduce kerbside recycling:** Council offers a 2 bin garbage (residual) and recycling (dry recycling) service to residents of Gulargambone and Coonamble. Dry recycling will be collected fortnightly and sent to the Gilgandra Waste Management Facility. Garbage will be collected weekly and sent to Coonamble Landfill for disposal.
3. **Introduce paper, food and garden organics recycling:** Council offers a 2 bin food, garden and paper (organics) and garbage (residual) service to residents of Gulargambone and Coonamble. Organics will be collected weekly and processed at a local composting facility at Coonamble Landfill (Coonamble Composting Facility). Garbage will be collected fortnightly and sent to Coonamble Landfill for disposal.

A multi criteria analysis was conducted for the three kerbside systems. The highest performing analysis was Option 1, assuming a landfill gate fee of \$47/t. Sensitivity analysis conducted by MRA found that the gate fee would need to increase to \$158/t before Council could implement a FOGO and paper/cardboard service at the same cost, resulting in a much higher diversion rate. Currently, the landfill gate fee does not account for post closure liabilities and asset replacement. MRA estimates that the true cost of landfill in the region (as a function of scale) is greater than \$120/t.

Table 1 Multi criteria analysis results

| Option                     |   | Economic       | Governance     | Environment    | Social         | Total Score |
|----------------------------|---|----------------|----------------|----------------|----------------|-------------|
|                            |   | Weighted score | Weighted score | Weighted score | Weighted score |             |
|                            |   | %              | %              | %              | %              |             |
| <b>Criterion weighting</b> |   | <b>40%</b>     | <b>10%</b>     | <b>35%</b>     | <b>15%</b>     | <b>100%</b> |
| <b>Option 1</b>            | - garbage to Coonamble landfill<br>- single bin service                             | 40.0%          | 2.5%           | 8.8%           | 12.5%          |             |
| <b>Option 2</b>            | - recycling to Gilgandra WMF<br>- residual to Coonamble landfill<br>- 2 bin service | 10.0%          | 5.0%           | 18.8%          | 6.3%           | 40%         |
| <b>Option 3</b>            | - FOGO + paper to composting<br>- residual to Coonamble landfill<br>- 2 bin service | 10.0%          | 7.5%           | 35.0%          | 5.0%           | 58%         |

The results of the consultation, infrastructure analysis and kerbside collection analysis and have guided the development of The Strategy. The Strategy will underpin the tender specifications and future contracts associated with the management and delivery of the collection service and waste asset management.

The Strategy recommends that Council continue to offer a 240L weekly collection service for residual waste to the residents of Gulargambone and Coonamble (Option 1 - BAU), assuming the true cost of landfill to Council is less than \$158/t (see 3.3.5).

It is recommended that Council close Quambone Landfill and obtain quotations to:

1. Establish and operate a transfer station in its place (under a build, own, operate, transfer contract arrangement); and
2. Expand the residual collection service to the township of Quambone, providing a standardised service across the LGA.

The pricing provided in the tender responses received by Council will determine which of these two options is the most economically viable. The chosen contractor will be responsible for the supply, delivery and maintenance of new 240L bin to all households receiving a residual service in the LGA upon commencement of the new contract.

The Strategy recommends that a transfer station be established at Coonamble Landfill to promote the recovery of metals/whitegoods, garden organics and chemical drums. The transfer station will also serve to restrict public access to the landfill face. The transfer station will be delivered under a new build, own, operate and transfer contract.

To improve administration and streamline management processes, it is recommended that Council rationalise its current collection and landfill/transfer station management contracts into a single contract. This will deliver economies of scale and increase competition for the contract, delivering a better outcome to Council.

## How will the strategy be implemented?

The findings of The Strategy have been summarised into a list of recommended actions for Council consideration (Table 2). The actions consider Council's objective to implement best practice waste management and resource recovery services for local residents.

**Table 2 Summary of recommended actions**

| Recommended actions |  |
|---------------------|--|
| <b>1</b>            | <b>Strategy actions</b>  |
|                     | A Review draft strategy findings and actions.  |
|                     | B Consult with community.  |
|                     | C Finalise strategy findings and actions.  |
|                     | D Adopt strategy findings and actions.   |
| <b>2</b>            | <b>Contract actions</b>  |
|                     | A Rationalise collection and waste asset management contracts into a single contract.  |
|                     | B Go to tender for collection and waste asset management, using The Strategy to guide the tender specifications.   |
|                     | C Engage a new contractor/s to deliver the waste services for Council.   |
| <b>3</b>            | <b>Landfill actions</b>  |
|                     | A Improve signage and traffic flow to prevent residents approaching the tip face (using skip bins/creating a small transfer station on site under the new contract). |
|                     | B Install the Community Recycling Centre at Coonamble Landfill.  |
|                     | C Install a weighbridge at Coonamble Landfill.   |
|                     | D Incorporate all costs into landfill pricing by conducting a landfill cost analysis.  |
|                     | E Create an independent landfill and transfer station budget, separate from the solid waste budget.  |
|                     | F Ensure data for MSW, C&I and C&D collection, processing and disposal is separated.   |
|                     | G Reinforce user-pays system to prevent compensating C&I and C&D waste stream with domestic rates.   |
|                     | I Commence making provisions for future expenditures to avoid the need to overcharge future users or ratepayers to cover unpriced liabilities.                       |
|                     | J Annually re-assess the operational and capital expenditures of the landfill to modify the pricing model and better plan for necessary provisions.                  |
|                     | K Convert Quambone Landfill into a transfer station.   |
| <b>4</b>            | <b>Grant actions</b>   |
|                     | A Apply for WLRM Environmental Improvement funding for Coonamble Landfill for CCTV, signage, boom gates etc.   |
|                     | B Apply for WLRM Landfill Consolidation funding to convert Quambone Landfill into a transfer station.  |
|                     | C Apply for WLRM Love Food Hate Waste funding to educate residents on waste avoidance.   |
| <b>5</b>            | <b>Other actions</b>   |
|                     | A Investigate options to participate in the Emissions Reduction Fund.  |
|                     | B Review the AWT and EfW technology markets for economically viable facilities operating at small scale.   |

## Glossary

| Abbreviation | Definition  |
|--------------|---|
| ACCUs        | Australian Carbon Credit Units                    |
| AD           | Anaerobic Digestion                               |
| AWT          | Alternative Waste Treatment                       |
| BAU          | Business As Usual                                 |
| C&D          | Construction and demolition (waste)               |
| C&I          | Commercial and Industrial (waste)                 |
| Council      | Coonamble Shire Council                           |
| EfW          | Energy from Waste                                 |
| ERF          | Emissions Reduction Fund                          |
| FO           | Food organics                                     |
| FOGO         | Food organics and garden organics                 |
| GHG          | Greenhouse Gas Emissions                          |
| GO           | Garden organics                                   |
| LGA          | Local Government Area                             |
| MBT          | Mechanical Biological Treatment                   |
| MRA          | MRA Consulting Group                              |
| MSW          | Municipal Solid Waste                             |
| NTCRS        | National Television and Computer Recycling Scheme |
| NPV          | Net Present Value                                 |
| RET          | Renewable Emissions Target                        |
| RRA          | Rural regional area                               |
| SSO          | Source Separated Organics                         |
| VKT          | Vehicle Kilometres Travelled                      |
| WHS          | Work Health and Safety                            |
| WLRM         | Waste Less Recycle More                           |



