

# Central Darling Shire Council

## Draft Waste Facilities

## Operations Strategic Plan



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Draft waste Facilities  
Operations Strategic Plan**

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# 1. SUMMARY

This Strategic Plan is the overarching document that provides direction for the future management of the waste facilities operated by Central Darling Shire Council. It establishes the principles from which long term plans of management have been developed for five of the six existing waste facilities and proposes the preparation of a closure plan for the waste facility at Sunset Strip, the site being closed and the area rehabilitated. Many of the elements within this suite of documents are interrelated and have strategic direction linkages

There will be two phases to the future operations of the waste facilities. The first phase will be in re-instating the sites to an improved standard after which deposited waste materials can be pushed up, compacted, shaped and covered on a regular basis. Geotechnical engineer, Robert H Amaral has developed concept designs for these improvements which form part of the long term plans of management for each facility. For some sites, the attainment of initial works that enable the improvements may require the engagement of contractors with suitable plant, such as a dozer, excavator, tip trucks and loader.

As general principles, litter should be contained and collected routinely and the stockpiles of separated materials formalised or landfilled. Only materials that have potential for beneficial on site re-use or transporting off site for re-processing should be separated and stockpiled. Activity areas should be rationalised, concentrated and not spread throughout a site.

The second phase will be the ongoing operation and development of the waste facilities in accordance with the concept designs as prepared by consulting geotechnical engineer, Robert H Amaral that are contained within the long term plans of management for each facility. The objective is for sites to be maintained to an acceptable standard which will include the routine pushing up and covering of the deposited waste materials. Operational budgets may need to be reflective of the increased frequency of such works at some sites.

The theme of this strategic plan reflects the resource constraints that confront Council in the delivery of all services, including waste services. The Shire has a very large geographical area, a small population, significant distances between towns and villages, many connecting roads are not sealed, a limited rate base from which to draw income streams and a part reliance on government support.

The financial modelling included in this strategic plan suggests a direction for Council if adopted that should be affordable, be environmentally sound, will not require the purchase of specialist plant, will continue with existing or improved service standards and not rely solely on contractors or on government assistance. The likely cost of delivering the milestones prepared within the long term plans of management for the waste facilities at Wilcannia, Menindee, Ivanhoe, Tilpa and White Cliffs and for the closure of Sunset Strip have been reflected into the modelling.

A number of assumptions were made in developing the model and the model cannot be absolute in its assessments because of the variables in distances, availability of plant, the results of community consultation, changes to Government legislation, plant hire rates, contractor performance and others. The model also relies on information provided by Council in its preparation. However, the model does provide relative comparisons of the likely financial effect of undertaking particular works. There is always the “do nothing” option and for Council to continue to accept the risks.

In recent consultations where changes to legislation have been enacted, the Environment Protection Authority (EPA) has made it clear that their preference is for smaller waste facilities to be closed and larger waste facilities to be secured and controlled, that is, access is limited only to times when there will be an operator's presence on site to supervise activities and the sites are capable of being locked and access denied. Having a controlled and supervised site is fundamental in mitigating many of the risks associated with the operation of the waste facilities. Although it is desirable to have the sites supervised and controlled, this endeavour has been tried in recent years by Council and the approach abandoned for a variety of reasons. Having uncontrolled and unsupervised site is a risk. Should this approach continue to be the case, Council will rely on the provisions within the POEO (Waste) Regulations 2014 whereby it is considered a defence (pollution defence) if the waste facility includes measures to reduce fire risk, reduce odour, noise and dust, control public access to the site and generally maintain the facility. This strategic plan provides Council with measures that would help support a pollution defence.

Paramount in the in the delivery of change will be in the undertaking of stakeholder engagement where change is proposed. This particularly relates to the closure of the Sunset Strip waste facility and where Council staff will be required to adopt changed practices in the manner in which the landfills are operated. A stakeholder engagement plan has been prepared that provides Council with guidance on undertaking engagement and the implementation will be an important endeavour. It is unlikely that any change to existing services and practices will receive universal agreement, however reaching general consensus should be the objective and encouraging stakeholder input a priority. When embarking on engagement, the more data and information that can be presented will enable stakeholders to be better informed and limit speculation. In this regard, Council should consider engaging geotechnical engineer Robert Amaral to train/educate staff who will be given the responsibility for delivering this strategic plan and the accompanying long term plans of management and for the ongoing monitoring of progress to ensure the intent of the Plans are being met

The key objectives of this strategic plan are to-

1. close and rehabilitate the Sunset Strip waste facility and to provide long term aftercare
2. operate the waste facilities at Wilcannia, White Cliffs, Tilpa, Ivanhoe and Menindee in accordance with the long term plans of management as prepared for each site and to deliver the milestones as proposed
3. develop and deliver training plans for waste staff and contractors
4. manage green waste in a manner that will not present a legacy issue
5. manage waste concrete in a manner that will not present a legacy issue
6. manage used tyres in a manner that will not present a legacy issue

7. adopt the “waste placement technique” as shown in Appendix 1
8. develop an asbestos policy
9. install standardised informational, directional and instructional signage at each site
10. adopt operating measures that will support “pollution defence” including the procurement and installation of CCTV monitoring at the waste facilities
11. procure and place mobile litter fences to contain windblown litter
12. rationalize and concentrate activity areas

## **2. PURPOSE**

Central Darling Shire Council has engaged Robert Bailey Consulting and Robert Amaral Geotechnical Engineer to prepare a strategic plan for the future operation of Councils waste facilities and to develop long term plans of management for each individual facility that will include concept designs for the progressive staged landfilling and establish milestones in the attainment of the final landforms. These documents will provide guidance in the development of the waste facilities over many decades and will enable succession planning as personnel transition to and from Council

## **3. OVERVIEW OF CURRENT OPERATIONS**

### **3.1 White Cliffs, Wilcannia, Ivanhoe, Tilpa, Menindee and Sunset Strip Waste Facilities**

#### **Staffing**

Council’s waste facilities serve relatively small populations with Wilcannia and Menindee at around 550 persons being the larger and Sunset Strip at about 85 and Tilpa (district) at 44 being the smallest. The quantities of waste being managed at the sites are therefore not major and it would be difficult to justify having the facilities controlled and supervised, perhaps with the exception of Wilcannia, Ivanhoe and Menindee.

The White Cliffs and Tilpa landfills are relatively well managed and are reflective of Council staff assuming responsibility and accountability for the operations of the facilities. For Wilcannia, Ivanhoe and Menindee, these waste facilities are not particularly well operated and the day to day management responsibility of these landfills should be delegated to specific Council personnel. Those given the responsibility for the management of the landfills should become familiar with the long term plans of management for each site and be accountable for the adoption of the changed practices. Equally, field staff who undertake the on-site activities should become familiar with the objectives of the long term plans of management and be trained in waste placement, landform shaping, compaction and covering



The management of the Sunset Strip waste facility is performed under a partnership agreement between Central Darling Shire Council and the Sunset Strip Progress Association. The site is not well managed and there is a noted failure to prevent fires, failure to report a pollution event, a failure to provide fall protection, a failure to prevent windblown litter and a failure to prevent the depositing of prohibited substances. Residents of Sunset Strip receive a discount to their domestic waste management charge in exchange to the Progress Association undertaking the landfill management. It should not be assumed that Council can simply abrogate its responsibilities by engaging the Progress Association to operate the waste facility.

### **Retained Above Ground Wastes**

At present, most waste facilities generally separate and stockpile green waste, scrap metal and used tyres. With the exception of scrap metal, there are no plans for the re-use or recycling of these materials. Contamination is an issue as is the potential to attract contractors to process the green waste and to a lesser extent, collect the scrap metal. The two main options are to control contamination and pay the cost of re-processing green waste for beneficial on-site re-use for erosion/dust control or as re-vegetation medium or to confine the materials to landfill. If directly landfilled, green waste would consume a large amount of void space if not well compacted and would require a significant quantity of ENM to effectively cover the material once landfilled.

As an alternative to shredding and to save costs, when suitable plant is available, that is larger plant with tracks such as dozer or excavator, the stockpiled green waste can be spread, larger items of contamination removed and the green waste broken up using a number of passes of the track machine. The broken up green waste can then be landfilled or placed on top of capped surfaces, depending on the quality of the finished product to control dust and erosion. It may also be used as cover as a substitute to ENM.

The regional waste group NetWaste has a contract in place for the shredding of green waste however Central Darling Shire is not a participant. NetWaste has obtained prices from a contractor for the shredding of used tyres, however it is dependent on a number of Councils participating. Central Darling may need to work in conjunction with neighbouring Councils such as Cobar and Broken Hill if this option is to be pursued. Placing small quantities of used tyres on the floor of the landfill and covering as the waste mass progresses in an alternative for the disposal of waste tyres.

### **Existing Plant**

It is evident that the placing, compacting, shaping and covering of general waste is somewhat difficult when using the types of plant currently available for use at the various landfills. Council generally relies on using front end loaders (FEL) in the operations of the landfills. It is understandable that Council relies on multi-purpose items of plant given the constraints faced and the significant distances between the waste facility sites. Improvements to the manner in which the FELs are used and improved techniques of waste placement are provided in the long term plans of management and demonstrated in Appendix 1 of this Plan.

## **Waste Collection Services**

The availability of a domestic waste collection service is limited to the towns of Wilcannia, Ivanhoe and Menindee where a weekly collection of residual household waste is provided using Council day labour. New collection vehicles were purchased in recent years for each town and are being written down over 20 years. There is no kerbside recycling or organics collections offered to residents and no near term intention to consider the introduction of these services. There are approximately 700 services provided to residents living within the collection areas and an annual domestic waste management charge (DWMC) of \$470 is applied. All collected household waste is taken to the local waste facilities for disposal.

Should the Sunset Strip waste facility be closed, the domestic waste collection service at Menindee should be extended to include Sunset Strip residences and potentially other residences or businesses along the route. The distance from Menindee to Sunset Strip is around 18 kilometres.

## **4. CURRENT AND EMERGING INFLUENCES**

There are a number of current and emerging factors that will have an influence on how Council approaches the management of its waste facilities. The NSW Government's current ambition of improving environmental performance of waste facilities through a recent revision of the POEO (Waste) Regulations 2014, by increasing resource recovery through the expansion of the Waste Levy and by controlling the spread of weeds through the Raw Mulch Exemption. All of these measures contribute to a level of complexity as to how Council will need to operate its waste facilities into the future.

### ***4.1 Licensing Requirements***

For Central Darling Shire Council's waste facilities, there is no requirement to licence the sites under current legislation, however, changes introduced to the POEO (Waste) Regulations in November 2014 place greater emphasis on mitigating risks in the operation of landfills under the banner of "pollution defence". It is considered a defence if the landfill is being operated in accordance with the requirements as prescribed in the (Waste) Regulations in that mitigation measures have been put in place for the management of dust, odour, prohibited wastes, uncontrolled access, surface/ground water pollution and fires in order to achieve a measurable degree for "pollution defence".

### ***4.2 Raw Mulch Exemption***

For Central Darling Shire Council the Raw Mulch Exemption is hardly relevant whilst ever Council does not shred the green waste that has been delivered to the waste facilities and to sell or give away the shredded product. The stockpiles of green waste retained on the Wilcannia, Ivanhoe and Menindee sites are being grossly contaminated with general waste



and would not be suitable for shredding and a contractor may be reluctant to shred the material and risk damage to his plant. Shredded green waste can be beneficially re-used within waste facilities for erosion control, dust suppression, berm formation and as a revegetation medium as part of the landform final capping. Alternative procedures for the management of green waste are included into the long term plans of management for the various waste facilities

### 4.3 Section 88 Waste and Environment Levy

Under Section 88 of the *Protection of the Environment Operations Act 1997* (POEO Act), occupiers of certain scheduled waste facilities are required to pay the waste and environment levy.

Originally relevant only to the Sydney Metropolitan Area (SMA) and then to the Extended Regulated Area (ERA) (Illawarra to the Hunter) the levy was further expanded in July 2009 to incorporate what is now know as the Regional Levy Area (RLA) and includes the north coast Local Government Areas (LGA) from Port Stephens to the Queensland border as well as the Blue Mountains and Wollondilly LGAs.

Although a further expansion of the levy area is re-visited by authorities from time to time, it is most unlikely Central Darling Shire will be included in any future expansion

## 5. PROPOSED CHANGES TO KEY PERFORMANCE AREAS

### 5.1 Landfill Rationalisation (White Cliffs, Wilcannia, Ivanhoe, Menindee, Tilpa and Sunset Strip Waste Facilities)

A strategic plan should examine the “need” or “strategic alignment” for a particular service or operation to be certain a continuation, expansion, introduction or cessation is warranted. For Central Darling Shire, an overview of the existing waste facilities demonstrates a general geographic spread of facilities that aligns with the centres of population, with the exception of the Sunset Strip waste facility. The Sunset Strip waste facility is located within about 18 kilometres of Menindee. The following table 1 examines the benefits and detractions of closing the Sunset Strip waste facility or continuing to operate the facility

Table 1

| Action  | Benefit   | Detraction   | Risk   |
|---|---|--|--|
| Prepare a closure plan for the Sunset Strip waste facility. Prepare a Stakeholder Engagement Plan. Enact engagement. Consider stakeholder input. Make a | Closure of the landfill and rehabilitation of the site will result in an environmental improvement<br><br>Risks will be mitigated | Residents at Sunset Strip will need to take bulky wastes to the Menindee waste facility for disposal<br><br>Some residents of Sunset Strip may | Residents become vocal in their opposition to the closure of the waste facility (mitigate the risk by undertaking stakeholder engagement in accordance with the stakeholder engagement |

|   |   |   |   |
|---|---|---|---|
| <p>determination. Prepare a report to Council recommending the closure of the Sunset Strip waste facility in accordance with the closure plan should this be the determination. . Notify the Sunset Strip Progress Association (SSPA) of the report and the date it will be considered, advising that submissions will be accepted prior to the meeting. Council makes a determination. Implement the Council resolution. Submit the closure plan to the EPA for approval before undertaking closure actions if this is Council's resolution.</p> | <p>Council will no longer have an administrative obligation</p> <p>The domestic waste collection service would be extended to include residents of Sunset Strip providing an improved means of waste disposal</p> <p>The full Domestic Waste Management Charge (DWMC) will apply to Sunset Strip residents</p> <p>There will be no ongoing cost in operating the waste facility. Saving can be used towards the expanded collection service and for operational improvements at the Menindee waste facility</p> <p>Residents and business on the route between Menindee and Sunset Strip may be entitled to receive the collection service</p> <p>The EPA generally support the closure of small village landfills</p> <p>Better utilisation of Council's domestic waste collection vehicle</p> | <p>oppose the closure of the waste facility</p> <p>There may be some initial illegal dumping of household waste near to the closed facility</p>   | <p>plan)</p>  |
| <p>Business as Usual. (BAU) Council continues with the partnership agreement with the SSPA to operate and manage the Sunset Strip waste facility</p>  | <p>For Council, the day to management of the waste facility is undertaken by a third party relieving Council of the management obligations</p> <p>For Sunset Strip residents, they receive a</p>  | <p>Council continues to be at risk from an agreement where the management of the waste facility underperforms the requirements of the EPA Environmental Guidelines: Solid Waste Landfills (2<sup>nd</sup> edition</p> | <p>A failure of the SSPA to prevent fires</p> <p>Uncontrolled fire spreads beyond the waste facility boundaries</p> <p>Environment Protection Authority (EPA)</p> |

|  |  |  |  |
|--|--|--|--|
|  | <p>substantial reduction in the DWMC as an offset to the facility management obligations</p> <p>Convenience for residents to dispose of bulky wastes</p> | <p>2016) and Regulations (Waste) 2014 made under the POEO Act 1997</p> <p>Management fees are recurring</p> <p>Loss of potential savings that could be used to support an extension of the domestic waste collection service and improvements to the operations of the Menindee waste facility</p> <p>Residents require to self haul household waste for disposal</p> <p>The landfill is in close proximity to the residential development (spread of fire, rodents, flies, odour, dust)</p> | <p>“caution” or Penalty Infringement Notice (PIN) as a result of a failure to report a pollution incident (eg fire)</p> <p>A failure of the SSPA to provide and maintain fall protection. Injury to facility users</p> <p>A failure of the SSPA to control windblown litter. EPA notice, caution or PIN</p> <p>A failure of the SSPA to prevent prohibited wastes from being deposited at the landfill</p> |
|--|--|--|--|

**Summary** - The “need” to retain the Sunset Strip waste facility is difficult to justify given the potential risks, the relatively close proximity to an alternative waste disposal facility and the ease at which a domestic waste collection can be extended to Sunset Strip from its operating base in Menindee some 18 kilometres away

**Environmental** - the environment would be improved should closure occur. Any illegal dumping should be addressed as soon as reported or detected, that is, waste removed to Menindee landfill, dumping investigated and the law applied to perpetrators

**Financial** – recurrent savings should be realised with the site closure and these funds used towards the provision of a domestic waste collection service to the Sunset Strip residents and for operational improvements at the Menindee waste facility.

**Social**- a kerbside general waste collection service would be a benefit to residents

**Conclusion – close and rehabilitate the Sunset Strip waste facility**

### 5.1.1 Landform Design

Filling plans are in effect the individual building blocks placed in a defined sequence that deliver the final landform design. For all Council’s sites, where the method of waste disposal is an excavation and fill on relatively flat ground, the sequence is not critical nor the final landform

overly complicated. For the foreseeable future, the landfills will progress as a series of trenches or within existing voids and the final landform designed as a domed cap that can be shaped to shed surface water. Final landform designs will be incorporated into individual long term plans of management for each waste facility

A closure plan has been prepared for the Sunset Strip waste facility should closure be Council's determination

### **5.1.2 Filling Plans**

The current method for waste disposal at all of Councils sites is to undertake large excavations, fill the voids with general waste and cap using the ENM overburden.

The current voids at Wilcannia, White Cliffs, Menindee and to a lesser extent, Ivanhoe, will not be fully consumed for a number of years, The long term plans of management as prepared for each site will include concept filling plans that will provide guidance on the progressive landfilling for the site. Returning Ivanhoe and Wilcannia landfills back into workable shapes will require detailed concept designs. However, once the current excavations have been filled, future trenching should become much simpler. Although the unit rate to undertake large excavations is more economical then for smaller trenches, the large voids are more difficult to control and operate compared to the smaller trenches. Mobile litter fencing can be placed in near proximity on three sides, waste placement controlled and a tipping face maintained

### **5.1.3 Final Capping**

The current EPA Environmental Guidelines: Solid Waste Landfills (2016) requires the capping to commence within 30 days of completion of landfilling in that area. As Council will continue with the trench/existing void place and fill method, applying a final cap and re-vegetating the existing landfill footprints should be undertaken. The primary environmental goal for site capping and re-vegetation according to the EPA Guidelines is "remediating landfill after closure". Capping will require the site to be shaped to allow for post closure settlement and to shed surface water. A re-vegetation medium (shredded green waste would be suitable) should be applied across the surface to encourage plant growth. Seeding with local native species or grasses should be considered, though natural re-vegetation is likely to occur from remnant plants located near to or within the sites. The design for final capping will be included into the long term plans of management for each site

### **5.1.4 Leachate Management**

The existing landfill footprints do not have constructed leachate collection systems and there is no requirement under the current EPA Environmental Guidelines: Solid Waste Landfills (2016) to install a leachate collection system for the types of waste facilities operated by Central Darling Shire Council. Without leachate collection systems, landfill operators rely on adopting best practice landfill operating procedures, which include keeping the active tipping face to a minimum size, diverting surface water away from the active tipping area, placing and compacting intermediate cover (intermediate cover is required to be placed to a depth of 300 mm over surfaces that will be exposed for more than 90 days), applying daily cover and achieving compaction rates greater than 650 kgs per cubic metre. These practices will be

included into the concept designs of the long term plan of management for each waste facility to ensure leachate is kept to a minimum and there is little risk of groundwater or surface contamination.

### **5.1.5 Master Planning**

Having a long term plan of management for a waste facility is a valuable tool in the designed development that would help ensure the progressive construction of infrastructure follows a logical process. It would improve the likelihood of structures being established with sensible interrelationships, orientation, sequencing and scale.

For townships that have static or declining populations which is representative of the townships within for Central Darling Shire, it is unlikely that master planning is necessary, however there are some basic principles that should be followed that consider interrelationship, traffic flow and drop off sequencing. Activity areas should be clustered to improve operations and to limit unnecessary activity area expansion, drop off areas should have resource recovery at the initial part of a loop and disposal at the end of the loop.

It is proposed in this strategic plan that only scrap metal will be stockpiled for transportation off site for re-processing and green waste temporarily stockpiled, then routinely broken up using a track machine and then landfilled. The better quality crushed material could be used on top of disturbed surfaces to control dust and erosion. Small quantities of tyres can be placed on the landfill floor and progressively covered by the waste mass.

### **5.1.6 Plant and Waste Placement**

For landfills where relatively small quantities of waste are received, that is less than 5000 tonnes per annum, a universal item of plant suitable to manage these wastes would be a traxcavator (crawler loader), such as a Cat 953 K. A traxcavator with a four in one bucket could be used to place and spread the waste at the active tipping area in shallow layers and to compact the waste. Compaction rates of 650 kilograms per cubic metre could be achieved and a more uniform finish maintained that would require a minimum of daily cover material. Well compacted waste would be less likely to generate windblown litter and would have reduced post closure settlement.

The traxcavator could be used to construct stormwater diversion berms, pre-strip the landfill floor, shape and grade the intermediate cover, push up the green waste/metals stockpiles, load trucks/trailers and a range of other activities in addition to placing and compacting waste. However, the cost of purchasing, maintaining and transporting one or more dedicated traxcavators between waste facilities would be significant as opposed to utilising Council's existing plant of FELs and adopting a specific waste placement and covering technique. Such a technique is included as an attachment to this Plan as well as inclusion into the long term plans of management for each waste facility, where appropriate. The provision and use of FELs could be undertaken by Council using day labour or by contractor.

The following table 2 examines the benefits and detractions of various methods of site management and the types of plant and the alternative waste placement techniques

Table 2

| System  | Benefits   | Detraction  | Risk   |
|---|--|---|--|
| <p>Write a landfill management tender specification. Call tenders and appoint a contractor on a 5-10 contract. Specify outcomes such as compaction rates, covering, attendance frequency, litter management. Apportion landfill management responsibilities</p> | <p>All day to day management obligations rest with the contractor freeing up Council staff time</p> <p>The contractor recruits and manages staff. Deals with HR matters</p> <p>The contractor procures and maintains suitable plant. Sources replacements in the event of plant breakdown</p> <p>Contractor can provide quality assurance in keeping with the specified outcomes</p> <p>One contract may include the management of multiple sites</p> <p>Consumption of void space and consumption of cover material is defined in the specification and can be measured</p> | <p>Contracts need to be managed by Council staff to ensure the services are being delivered in accordance with the specification</p> <p>Annual performance reviews to be undertaken by Council</p> <p>“In contract” variations can be expensive</p> <p>The specification would include defined outcomes with limited flexibility.</p> <p>There is a high probability that the cost would be beyond Council’s willingness to pay</p> | <p>No interest from contractors in the tender process</p> <p>Contractor default</p> <p>Contractor fails to deliver the specified outcomes</p> <p>Council should not call for tenders unless there is an intention to proceed. Should the tendered prices be beyond Council’s capacity to pay, then Council does not proceed, there is reputational loss</p> <p>Contractor failure to report a pollution event (for a range of reasons)</p> |
| <p>Council operates the landfills using day labour and existing plant. Council FELs used at Wilcannia, Ivanhoe and Menindee and occasional contractor FEL at White Cliffs to supplement</p>   | <p>Council can use existing plant and field staff and adjust site attendances as required.</p> <p>Costs are currently known and can be controlled as needed.</p>   | <p>Staff need to be trained in the delivery of the long term plans of management and the waste placement techniques</p> <p>Budgets would need to be increased to be able</p>  | <p>Failure to deliver the long term plans of management because of</p> <ul style="list-style-type: none"> <li>- *lack of staff training</li> <li>* underfunding</li> <li>* failure to commit</li> </ul>  |

|  |  |  |  |
|--|--|--|--|
| <p>bobcat and mini excavator. Occasional dozer used at Tilpa Waste placed in 2 – 2.5 metre rises, top down and “cliffed” face achieved. Waste compacted using downward pressure from the bucket when height is achieved. Cover applied to “compacted” waste as the tipping platform advances. Cover dropped over “cliffed” face at the end of the process to control litter.</p> | <p>No need to purchase specialist plant or train staff in its use</p> <p>No need to re-deploy staff or make redundancies as work practices will continue</p> | <p>to achieve the desired outcomes</p> |  |
|--|--|--|--|

**Conclusion – on balance, the approach most likely to deliver the best outcome given Council’s resource constraints is - *Council operates the landfills using day labour and existing plant, adhering to adopted concept filling plans and placing/covering waste in accordance with defined waste placement technique***

### **5.1.7 Staff Training**

It is incumbent on Council to ensure staff and contractors associated with the operations of the waste facilities are knowledgeable in the content of site management documents, have been trained in their implementation and are competent and capable in their delivery.

Long Term Plans of Management (LTPoM) have been prepared for all of Council’s waste facilities and provide guidance on waste placement and compaction, principles to follow to minimise the production of leachate and the rehabilitation of previously disturbed areas. Council staff should be aware of the content and objectives of these LTPoM and be versed in the implementation.

It is therefore important that training, both start up and refresher training forms part of Councils standard procedures in the operation of the waste facilities

**Conclusion – develop training plans for waste staff and contractors. This may take the form of engaging the geotechnical engineer who prepared the concept filling plans for the waste facilities to deliver initial training and knowledge**



### **5.1.8 Litter Management**

Fixed litter fences have been established in the vicinity of the active tipping areas at some sites and at the perimeter boundaries of other sites and retain much of the windblown litter coming from the active tipping areas. The litter contained against the litter fencing continues to accumulate and there is no program established to regularly collect and landfill the litter. Mobile litter fences are more effective, can be placed in close proximity to the active tipping areas and re-located as the tipping platform moves

**Conclusion – Procure mobile litter fences and positioned fencing near to the active tipping areas to prevent the spread of windblown litter. Develop a program whereby the accumulated litter is collected routinely and landfilled**

## **5.2 Waste Minimisation and Resource Recovery**

### **5.2.1 Cost Benefit**

There have been many studies that demonstrate the benefits of recycling and the NSW EPA has a calculator on its website that shows the value in monetary savings for recycling household materials. The key driver for Councils to provide kerbside or drop off recycling services in their communities is residents “feeling good” through their recognising the environmental benefits of recycling and by making a contribution to environmental sustainability from their own actions. There are many benefits to waste minimisation and recycling but it needs to be put in context.

**Conclusion - For Central Darling Shire, the small population coupled with long distances between towns and villages together with large transport distances to recycling processing centres basically make most recycling initiatives non viable with the exception of the collection of scrap metal at the larger waste facilities and “return and earn” at Wilcannia**

## **5.3 Organics Management**

### **5.3.1 Overview**

Statistics support the view that approximately 40% of the waste stream consists of organic material. This can be in the form of garden waste, lawn clippings, food waste, construction timber, pallets, poles, posts, bark, saw dust, mill wastes etc. The potential to recover these

material types, effectively manage contamination and reduce the quantity of organic material going to landfill is significant and cannot be understated. There is the reality however that each phase in the recovery, processing and re-use of organic wastes has a corresponding direct cost. Achieving a balance where environmental and social benefits equal or out way the costs of recovery, processing and re-use is the challenge confronting any Council

It is also important to understand that the processing of inert manufactured timber waste and garden waste requires a lower order of environmental control compared to the processing of organic waste containing food. Generally speaking, where food is involved processing systems are required to be enclosed, such as in tunnels, within impermeable fabric or other forms of covers to control odour, vermin, leachate and vectors. Simple systems, such as windrow composting, are not generally suitable where food waste is included.

Equally, the Raw Mulch Exemption limits the uses for shredded organic waste unless it complies with AS 4454 (Composts, Soil Conditioners and Mulches). However, shredded green waste (mulch) can be used beneficially at the waste facilities for a range of beneficial re-use purposes

### **5.3.2 Organics Management Plan**

Fundamental to the future management of organic waste is in the balance of the cost to landfill this material with the corresponding consumption of landfill void space as opposed to the cost of segregating and shredding the organic waste for beneficial re- use in the operations of the landfill. The difficulty confronting Council is the fact that the waste facilities are not controlled nor supervised. The reality is that this status is unlikely to change in the near to medium term and the consequence is that separated green waste becomes highly contaminated. Contractors are unwilling to shred the material for fear of damage to their plant and any material that may be shredded is contaminated with foreign material There is little point in separating green waste if there is no viable re-use options. A better option would be to spread the stockpiled green waste, break it up and landfill the poorer quality product and use the better quality product for erosion/dust control or for covering waste.

**Conclusion – green waste can be separated and stockpiled as a temporary measure. When suitable plant is available, that is larger plant with tracks such as dozer, excavator, the stockpiled green waste is spread, larger items of contamination separated and the green waste broken up using a number of passes of the track machine. The broken up green waste is then landfilled or placed on top of capped surfaces, depending on the quality of the finished product**

### **5.3.3 Improvement Works**

The long term plans of management prepared for the individual waste facilities have identified areas where improvement works need to be undertaken as a first priority to ensure the future

operation of the facilities can proceed to deliver cost benefits and improved environmental outcomes. These are defined in the LTPoM as “milestones”

In general, these works relate to the winning of cover material before future waste is placed or re-shaping and covering existing waste. The Amara concepts plans contained in the respective LTPoM provide guidance on these improvement works.

At this stage, these works (milestones) are likely to be unplanned expenditures and may require Council to apportion funds to enable the works to proceed. The likely cost of these works is included into the financial modelling contained in Part 5.4 of this strategic plan and within the individual long term plans of management.

**Conclusion - operate the waste facilities at Wilcannia, White Cliffs, Tilpa, Ivanhoe and Menindee in accordance with the long term plans of management as prepared for each site and deliver the milestones as proposed**

### **Summary of Actions**

- 1. close and rehabilitate the Sunset Strip waste facility and provide long term aftercare.**
- 2. extend the domestic waste collection service to include residences at Sunset Strip**
- 3. Council operates the landfills using day labour and existing plant, adhering to adopted concept filling plans and placing/covering waste in accordance with defined waste placement technique**
- 4. develop training plans for waste staff and contractors. This may take the form of engaging the geotechnical engineer who prepared the concept filling plans for the waste facilities to deliver initial training and understanding**
- 5. procure mobile litter fences and positioned fencing near to the active tipping areas to prevent the spread of windblown litter. Develop a program whereby the accumulated litter is collected routinely and landfilled**
- 6. recycling initiatives are to be limited to the collection of scrap metal at the larger waste facilities and “return and earn” at Wilcannia**
- 7. green waste can be separated and stockpiled as a temporary measure. When suitable plant is available, that is larger plant with tracks such as dozer, excavator, the stockpiled green waste is spread, larger items of contamination separated and the green waste broken up using a number of passes of the track machine. The broken up green waste is then landfilled or placed on top of capped surfaces, depending on the quality of the finished product**
- 8. operate the waste facilities at Wilcannia, White Cliffs, Tilpa, Ivanhoe and Menindee in accordance with the long term plans of management as prepared for each site and deliver the milestones as proposed**
- 9. adopt measures to enable “pollution defence” to be demonstrated, including the procurement and installation CCTV stations at the Menindee, Ivanhoe, Wilcannia and White Cliffs waste facilities**

## **5.4 Resources**

### **5.4.1 Overview**

Council's ambitions for waste management and the resourcing to enable the delivery of those ambitions need to be in balance. The implementation of the "milestones" that will deliver the strategic plan need to be in balance with Council's adopted time frame and the available resources. Achieving this balance will be essential if the strategy delivery is to align with expectations. For this reason, the strategic plan is not overly ambitious. The focus is sustainability and working with the resources that are available to achieve realistic outcomes

Those given the responsibility of delivery will need to have the capability, the capacity and the commitment to do so. Capable means skills and knowledge, capacity means depth of resources and commitment means a pressing desire to deliver. The strategic plan will provide the pathway to deliver the adopted ambitions, but the implementation will rest with Council. Success will depend on support from Council and at the Executive and Management levels in providing capability, capacity and commitment.

The strategic plan implementation programs will require effort in their delivery by sufficient staff with the necessary specialist skills. This may require a revision of the roles and responsibilities of current staff and the engagement of additional human resources, either contractors or staff, for the delivery phases. It may also require an investment in current staff through skills development.

Financial modelling will be a valuable tool in predicting future operational income, operational expenditure and proposed capital works. A financial model has been prepared based on the 2020/21 Waste budget and the 2019/20 actual incomes and expenditures. This baseline model has been adapted to reflect the cost of the key proposed actions identified in this strategic review and should be used as a guide to the cost implications of adopting the defined pathways.

### **5.5.2 Financial Modelling**

The financial model is simply a spreadsheet and Council can modify the model to reflect alternative approaches. The model is simply a tool to help predict the effect of proposed actions and the ensuing result to the bottom line and is based on information provided by Council together with assumptions.

#### **How to Read the Financial Models**

The recurrent income streams have been taken from information provided by Council based on the 2019/20 actual financials and the 2020/21 budgets for Waste. An annual increase of 2% has been applied in line with the Consumer Price Index (CPI).

Operational expenditures have been added where additional works are required at the waste facilities to reflect improvements to the landfill operations.

The cost of capital works has been included where capital improvements are required and much of the cost assessments are based on the estimates from similar activities undertaken at other Council sites or relevant information obtained by contractors in the waste industry.

The cumulative effect of operational income and operational expenditure is shown at the bottom line of "balance of reserves". Council should establish a Waste Reserve to ensure depreciation provisions are retained to enable the future requirements for capital purchase to be met. Any shortfall in operational income would need to be addressed by increasing fees and charges and the quantum of these increases would reflect into the Domestic Waste Management Charge payable by residents. Introducing gate fees at the waste facilities for domestic, commercial, industrial and demolition wastes has not been considered given this was tried in the recent past and subsequently abandoned..

### **Assumptions**

- Sums identified in the LTPoM milestones are provisional sums only and are based on comparable industry costings
- The Sunset Strip waste facility will be closed, annual savings will be used in part to provide a domestic general waste collection service and part will be added to the operations of the Menindee waste facility
- Operational budgets for the Wilcannia, Menindee and Ivanhoe waste facilities will increase by 30% in order to achieve the LTPoM improvements.
- White Cliffs and Tilpa waste facilities will operate under current budgets
- Grant funding will become available for the provision of CCTV surveillance to the Wilcannia, White Cliffs, Ivanhoe and Menindee waste facilities
- Grant funding will become available for the procurement of litter fences for the Menindee, Ivanhoe and Wilcannia waste facilities

# Baseline Financial Model

## Central Darling Shire Council - Waste Management Long Term Financial Plan - Base Case

| CPI for income forecasts                   |                |                   | 2%                | 2%                  | 2%                  | 2%                  | 2%                  | 2%                  | 2%                  | 2%                  | 2%                  | 2%                  |
|--|----------------|-------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|  | Job Number     | Actual<br>2018/20 | Budget<br>2020/21 | Forecast<br>2021/22 | Forecast<br>2022/23 | Forecast<br>2023/24 | Forecast<br>2024/25 | Forecast<br>2025/26 | Forecast<br>2026/27 | Forecast<br>2027/28 | Forecast<br>2028/29 | Forecast<br>2029/30 |
| <b>Income</b>                              |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| <b>Annual Charges</b>                      |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Annual Charges                             |                | 603,348           | 603,400           | 615,468             | 627,777             | 640,333             | 653,140             | 666,202             | 679,526             | 693,117             | 706,979             | 721,119             |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Sub-total Domestic Garbage Charges         |                | 603,348           | 603,400           | 615,468             | 627,777             | 640,333             | 653,140             | 666,202             | 679,526             | 693,117             | 706,979             | 721,119             |
| <b>Tipping Fees</b>                        |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
|  |                | 55,461            | 55,461            | 55,570              | 57,702              | 58,856              | 60,033              | 61,233              | 62,458              | 63,707              | 64,981              | 66,281              |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
|  |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Sub-total tipping Fees                     |                | 55,461            | 55,461            | 55,570              | 57,702              | 58,856              | 60,033              | 61,233              | 62,458              | 63,707              | 64,981              | 66,281              |
| <b>Total Income</b>                        |                | <b>658,809</b>    | <b>658,861</b>    | <b>672,038</b>      | <b>685,479</b>      | <b>699,189</b>      | <b>713,172</b>      | <b>727,436</b>      | <b>741,984</b>      | <b>756,824</b>      | <b>771,961</b>      | <b>787,400</b>      |
| CPI for expenditure forecasts              |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| <b>Expenditure</b>                         |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| <b>Garbage &amp; Sanitation</b>            |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Clean up Day Expenses                      | 0073-0001-0006 | 2,365             | 2,000             | 2,040               | 2,081               | 2,122               | 2,165               | 2,208               | 2,252               | 2,297               | 2,343               | 2,390               |
| Domestic Waste Collection                  |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| - Wilcannia                                | 0073-0001-0008 | 16,343            | 25,000            | 25,500              | 26,010              | 26,530              | 27,061              | 27,602              | 28,154              | 28,717              | 29,291              | 29,877              |
| - Menindee                                 | 0073-0001-0009 | 40,245            | 40,000            | 40,800              | 41,616              | 42,448              | 43,297              | 44,163              | 45,046              | 45,947              | 46,866              | 47,804              |
| - Ivanhoe                                  | 0073-0001-0010 | 8,677             | 20,000            | 20,400              | 20,808              | 21,224              | 21,649              | 22,082              | 22,523              | 22,974              | 23,433              | 23,902              |
| Street Furniture/Bus Shelters              | 0073-0001-0011 | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Wheeler Bin RSM                            | 0073-0001-0023 | 160               | 5,000             | 5,100               | 5,202               | 5,306               | 5,412               | 5,520               | 5,631               | 5,743               | 5,858               | 5,975               |
| Sub-total Garbage & Sanitation             |                | 67,790            | 92,000            | 93,840              | 95,717              | 97,631              | 99,584              | 101,575             | 103,607             | 105,679             | 107,793             | 109,945             |
| <b>Tip Management Costs</b>                |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Tip Costs                                  |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| - Wilcannia                                | 0073-0001-0012 | 26,000            | 25,000            | 25,500              | 26,010              | 26,530              | 27,061              | 27,602              | 28,154              | 28,717              | 29,291              | 29,877              |
| - Sunset Strip                             | 0073-0001-0017 | 179               | 10,000            | 10,200              | 10,404              | 10,612              | 10,824              | 11,041              | 11,262              | 11,487              | 11,717              | 11,951              |
| - Tilloa                                   | 0073-0001-0015 | 1,009             | 2,000             | 2,040               | 2,081               | 2,122               | 2,165               | 2,208               | 2,252               | 2,297               | 2,343               | 2,390               |
| - White Cliffs                             | 0073-0001-0016 | 4,100             | 10,000            | 10,200              | 10,404              | 10,612              | 10,824              | 11,041              | 11,262              | 11,487              | 11,717              | 11,951              |
| - Menindee                                 | 0073-0001-0017 | 28,683            | 30,000            | 30,600              | 31,212              | 31,835              | 32,473              | 33,122              | 33,785              | 34,461              | 35,150              | 35,853              |
| - Ivanhoe                                  | 0073-0001-0019 | 8,222             | 15,000            | 15,300              | 15,606              | 15,918              | 16,236              | 16,561              | 16,892              | 17,230              | 17,575              | 17,926              |
| Sub-total Tip Management costs             |                | 68,201            | 92,000            | 93,840              | 95,717              | 97,631              | 99,584              | 101,575             | 103,607             | 105,679             | 107,793             | 109,945             |
| <b>Street Cleaning Costs</b>               |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Street Cleaning Costs                      |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| - Wilcannia                                | 0074-0001-0000 | 33,218            | 45,000            | 45,900              | 46,818              | 47,754              | 48,709              | 49,684              | 50,677              | 51,691              | 52,725              | 53,779              |
| - Menindee                                 | 0075-0001-0000 | 39,751            | 40,000            | 40,800              | 41,616              | 42,448              | 43,297              | 44,163              | 45,046              | 45,947              | 46,866              | 47,804              |
| - Ivanhoe                                  | 0076-0001-0000 | 22,304            | 25,000            | 25,500              | 26,010              | 26,530              | 27,061              | 27,602              | 28,154              | 28,717              | 29,291              | 29,877              |
| - Whitecliffs                              | 0077-0001-0000 | 8,778             | 11,000            | 11,220              | 11,444              | 11,673              | 11,907              | 12,146              | 12,389              | 12,636              | 12,888              | 13,146              |
|  |                | 104,051           | 121,000           | 123,420             | 125,888             | 128,405             | 130,974             | 133,594             | 136,266             | 138,991             | 141,771             | 144,606             |
| <b>Other Sanitary &amp; Garbage</b>        | 0078-0001-0000 | 466               | 5,000             | 5,100               | 5,202               | 5,306               | 5,412               | 5,520               | 5,631               | 5,743               | 5,858               | 5,975               |
|  |                | 466               | 5,000             | 5,100               | 5,202               | 5,306               | 5,412               | 5,520               | 5,631               | 5,743               | 5,858               | 5,975               |
| <b>Other Expenses</b>                      |                |                   |                   |                     |                     |                     |                     |                     |                     |                     |                     |                     |
| Tip Remediation as per Deon Schedule       |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Depr of Plant & Equip Value \$873,745 @ 5% |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Depr of Other Infrastructure               |                | 46,824            | 46,824            | 47,760              | 48,716              | 49,690              | 50,684              | 51,697              | 52,731              | 53,786              | 54,862              | 55,959              |
| General Overhead                           |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |
| Remediation Provision                      |                | 0                 | 0                 | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   | 0                   |

Central Darling Shire Council - Waste Management Long Term Financial Plan - Base Case

CPI for income forecasts

| Job Number                               | Actual<br>2019/20 | Budget<br>2020/21 | 2%<br>Forecast<br>2021/22 | 2%<br>Forecast<br>2022/23 | 2%<br>Forecast<br>2023/24 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 | 2%<br>Forecast<br>2026/27 | 2%<br>Forecast<br>2027/28 | 2%<br>Forecast<br>2028/29 | 2%<br>Forecast<br>2029/30 |
|--|-------------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|  | 46,824            | 46,824            | 47,760                    | 48,716                    | 49,690                    | 50,684                    | 51,697                    | 52,731                    | 53,786                    | 54,862                    | 55,959                    |
| <b>Total Expenditure</b>                 | <b>287,372</b>    | <b>356,824</b>    | <b>363,960</b>            | <b>371,240</b>            | <b>378,664</b>            | <b>386,238</b>            | <b>393,963</b>            | <b>401,842</b>            | <b>409,879</b>            | <b>418,076</b>            | <b>426,438</b>            |
| <b>Net Operating Surplus (Shortfall)</b> | <b>371,437</b>    | <b>302,037</b>    | <b>308,078</b>            | <b>314,239</b>            | <b>320,524</b>            | <b>326,935</b>            | <b>333,473</b>            | <b>340,143</b>            | <b>346,946</b>            | <b>353,884</b>            | <b>360,962</b>            |

Central Darling Shire Council - Waste Management Long Term Financial Plan - Base Case

CPI for income forecasts

| Job Number                           | Actual<br>2019/20 | Budget<br>2020/21 | 2%<br>Forecast<br>2021/22 | 2%<br>Forecast<br>2022/23 | 2%<br>Forecast<br>2023/24 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 | 2%<br>Forecast<br>2026/27 | 2%<br>Forecast<br>2027/28 | 2%<br>Forecast<br>2028/29 | 2%<br>Forecast<br>2029/30 |
|--------------------------------------|-------------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <b>Capital Income</b>                |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| <b>Capital Expenditure</b>           | 0                 | 0                 | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
|                                      | 0                 | 0                 | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| <b>Net Capital Surplus (Deficit)</b> | <b>0</b>          | <b>0</b>          | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  | <b>0</b>                  |
| <b>Reserve Transfer</b>              | <b>371,437</b>    | <b>302,037</b>    | <b>308,078</b>            | <b>314,239</b>            | <b>320,524</b>            | <b>326,935</b>            | <b>333,473</b>            | <b>340,143</b>            | <b>346,946</b>            | <b>353,884</b>            | <b>360,962</b>            |
| Waste reserve balance 1 July         | 392,000           | 763,437           | 1,065,474                 | 1,373,552                 | 1,687,791                 | 2,008,315                 | 2,335,250                 | 2,668,723                 | 3,008,866                 | 3,355,811                 | 3,709,696                 |
| Cash Result for year                 | 371,437           | 302,037           | 308,078                   | 314,239                   | 320,524                   | 326,935                   | 333,473                   | 340,143                   | 346,946                   | 353,884                   | 360,962                   |
| <b>Waste reserve</b>                 | <b>763,437</b>    | <b>1,065,474</b>  | <b>1,373,552</b>          | <b>1,687,791</b>          | <b>2,008,315</b>          | <b>2,335,250</b>          | <b>2,668,723</b>          | <b>3,008,866</b>          | <b>3,355,811</b>          | <b>3,709,696</b>          | <b>4,070,658</b>          |



# Adjusted Financial Model

## Central Darling Shire Council - Waste Management Long Term Financial Plan - Adjusted Model

CPI for income forecasts

| Job Number                                 | Actual<br>2019/20 | Budget<br>2020/21 | 2%<br>Forecast<br>2021/22 | 2%<br>Forecast<br>2022/23 | 2%<br>Forecast<br>2023/24 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 | 2%<br>Forecast<br>2026/27 | 2%<br>Forecast<br>2027/28 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 |
|--|-------------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <b>Income</b>                              |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| <b>Annual Charges</b>                      |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Annual Charges (55 special charge removed) | 603,348           | 603,400           | 607,468                   | 619,617                   | 632,010                   | 644,550                   | 657,543                   | 670,694                   | 684,108                   | 697,790                   | 711,746                   |
| Sunset Strip                               |                   |                   | 0                         | 20,000                    | 20,400                    | 20,808                    | 21,224                    | 21,649                    | 22,082                    | 22,523                    | 22,974                    |
|  |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
|  |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
|  |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| Sub-total Domestic Garbage Charges         | 603,348           | 603,400           | 607,468                   | 639,617                   | 652,410                   | 665,358                   | 678,767                   | 692,342                   | 706,189                   | 720,313                   | 734,719                   |
| <b>Tipping Fees</b>                        |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|  | 55,461            | 55,461            | 56,570                    | 57,702                    | 58,856                    | 60,033                    | 61,233                    | 62,458                    | 63,707                    | 64,981                    | 66,281                    |
|  |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
|  |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| Sub-total tipping Fees                     | 55,461            | 55,461            | 56,570                    | 57,702                    | 58,856                    | 60,033                    | 61,233                    | 62,458                    | 63,707                    | 64,981                    | 66,281                    |
| <b>Total Income</b>                        | <b>658,809</b>    | <b>658,861</b>    | <b>664,038</b>            | <b>697,319</b>            | <b>711,265</b>            | <b>725,491</b>            | <b>740,000</b>            | <b>754,800</b>            | <b>769,897</b>            | <b>785,294</b>            | <b>801,000</b>            |
| CPI for expenditure forecasts              |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| <b>Expenditure</b>                         |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| <b>Garbage &amp; Sanitation</b>            |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Clean up Day Expenses                      | 3073-0001-0006    | 2,365             | 2,000                     | 2,040                     | 2,081                     | 2,122                     | 2,165                     | 2,208                     | 2,252                     | 2,297                     | 2,343                     |
| Domestic Waste Collection                  |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| - Wilcannia                                | 3073-0001-0008    | 16,343            | 25,000                    | 25,500                    | 26,010                    | 26,530                    | 27,061                    | 27,602                    | 28,154                    | 28,717                    | 29,291                    |
| - Renindee                                 | 3073-0001-0009    | 40,245            | 40,000                    | 40,800                    | 41,616                    | 42,448                    | 43,297                    | 44,163                    | 45,046                    | 45,947                    | 46,866                    |
| - Ivanhoe                                  | 3073-0001-0010    | 8,677             | 20,000                    | 20,400                    | 20,808                    | 21,224                    | 21,649                    | 22,082                    | 22,523                    | 22,974                    | 23,433                    |
| - Sunset Strip                             |                   |                   | 12,000                    | 12,240                    | 12,485                    | 12,734                    | 12,989                    | 13,249                    | 13,514                    | 13,784                    | 14,000                    |
| Street Furniture/Bus Shelters              | 3073-0001-0014    | 0                 | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| Wheeler Bin R&M                            | 3073-0001-0020    | 160               | 5,000                     | 5,100                     | 5,202                     | 5,306                     | 5,412                     | 5,520                     | 5,631                     | 5,743                     | 5,858                     |
| Sub-total Garbage & Sanitation             |                   | 67,790            | 92,000                    | 105,840                   | 107,957                   | 110,116                   | 112,318                   | 114,565                   | 116,856                   | 119,193                   | 121,577                   |
| <b>Tip Management Costs</b>                |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Tip Costs                                  |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| - Wilcannia (Increase 30%)                 | 3073-0001-0011    | 26,008            | 25,000                    | 32,000                    | 32,640                    | 33,293                    | 33,959                    | 34,638                    | 35,331                    | 36,037                    | 36,758                    |
| - Sunset Strip (dose and monitoring)       | 3073-0001-0012    | 179               | 10,000                    | 500                       | 510                       | 520                       | 531                       | 541                       | 552                       | 563                       | 574                       |
| - Tipta                                    | 3073-0001-0015    | 1,009             | 2,000                     | 2,040                     | 2,081                     | 2,122                     | 2,165                     | 2,208                     | 2,252                     | 2,297                     | 2,343                     |
| - White Cliffs                             | 3073-0001-0016    | 4,100             | 10,000                    | 10,200                    | 10,404                    | 10,612                    | 10,824                    | 11,041                    | 11,262                    | 11,487                    | 11,717                    |
| - Renindee (Increase 30%)                  | 3073-0001-0017    | 23,683            | 30,000                    | 40,000                    | 40,800                    | 41,616                    | 42,448                    | 43,297                    | 44,163                    | 45,046                    | 45,947                    |
| - Ivanhoe (Increase 30%)                   | 3073-0001-0018    | 8,222             | 15,000                    | 20,000                    | 20,400                    | 20,808                    | 21,224                    | 21,649                    | 22,082                    | 22,523                    | 22,974                    |
| Sub-total Tip Management costs             |                   | 68,201            | 92,000                    | 104,740                   | 106,835                   | 108,971                   | 111,151                   | 113,374                   | 115,641                   | 117,954                   | 120,313                   |
| <b>Street Cleaning Costs</b>               |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Street Cleaning Costs                      |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| - Wilcannia                                | 0074-0001-0000    | 33,216            | 45,000                    | 45,000                    | 46,616                    | 47,754                    | 48,709                    | 49,684                    | 50,677                    | 51,691                    | 52,725                    |
| - Renindee                                 | 0075-0001-0000    | 39,791            | 40,000                    | 40,800                    | 41,616                    | 42,448                    | 43,297                    | 44,163                    | 45,046                    | 45,947                    | 46,866                    |
| - Ivanhoe                                  | 0076-0001-0000    | 22,304            | 25,000                    | 25,500                    | 26,010                    | 26,530                    | 27,061                    | 27,602                    | 28,154                    | 28,717                    | 29,291                    |
| - Whitecliffs                              | 0077-0001-0000    | 8,778             | 11,000                    | 11,200                    | 11,444                    | 11,673                    | 11,907                    | 12,145                    | 12,388                    | 12,636                    | 12,888                    |
| Sub-total Street Cleaning Costs            |                   | 104,091           | 121,000                   | 123,400                   | 125,688                   | 128,406                   | 130,974                   | 133,594                   | 136,265                   | 138,991                   | 141,771                   |
| <b>Other Sanitary &amp; Garbage</b>        |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|  | 3078-0001-0000    | 466               | 5,000                     | 5,100                     | 5,202                     | 5,306                     | 5,412                     | 5,520                     | 5,631                     | 5,743                     | 5,858                     |
|  |                   | 466               | 5,000                     | 5,100                     | 5,202                     | 5,306                     | 5,412                     | 5,520                     | 5,631                     | 5,743                     | 5,858                     |
| <b>Other Expenses</b>                      |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Tip Remediation as per Dean Schedule       |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| Depn of Plant & Equip Value \$573,745 @ 5% |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| Depn of Other Infrastructure               |                   | 46,824            | 46,824                    | 47,760                    | 48,716                    | 49,690                    | 50,684                    | 51,697                    | 52,731                    | 53,786                    | 54,862                    |
| General Overhead                           |                   |                   | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |

**Central Darling Shire Council - Waste Management Long Term Financial Plan - Adjusted Model**

| CPI for Income forecasts                 |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|--|-------------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Job Number                               | Actual<br>2019/20 | Budget<br>2020/21 | 2%<br>Forecast<br>2021/22 | 2%<br>Forecast<br>2022/23 | 2%<br>Forecast<br>2023/24 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 | 2%<br>Forecast<br>2026/27 | 2%<br>Forecast<br>2027/28 | 2%<br>Forecast<br>2028/29 | 2%<br>Forecast<br>2029/30 | 2%<br>Forecast<br>2030/31 |
| Remediation Provider                     | 0                 | 0                 | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
|  | 46,824            | 46,824            | 47,760                    | 48,716                    | 49,690                    | 50,684                    | 51,697                    | 52,731                    | 53,788                    | 54,862                    | 55,959                    |                           |
| <b>Total Expenditure</b>                 | <b>287,372</b>    | <b>356,824</b>    | <b>386,860</b>            | <b>394,506</b>            | <b>402,409</b>            | <b>410,530</b>            | <b>418,790</b>            | <b>427,125</b>            | <b>435,649</b>            | <b>444,361</b>            | <b>453,269</b>            |                           |
| <b>Net Operating Surplus (Shortfall)</b> | <b>371,437</b>    | <b>302,037</b>    | <b>277,178</b>            | <b>302,721</b>            | <b>308,776</b>            | <b>314,951</b>            | <b>321,260</b>            | <b>327,675</b>            | <b>334,220</b>            | <b>340,913</b>            | <b>347,732</b>            |                           |

**Central Darling Shire Council - Waste Management Long Term Financial Plan - Adjusted Model**

| CPI for Income forecasts             |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
|--------------------------------------|-------------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Job Number                           | Actual<br>2019/20 | Budget<br>2020/21 | 2%<br>Forecast<br>2021/22 | 2%<br>Forecast<br>2022/23 | 2%<br>Forecast<br>2023/24 | 2%<br>Forecast<br>2024/25 | 2%<br>Forecast<br>2025/26 | 2%<br>Forecast<br>2026/27 | 2%<br>Forecast<br>2027/28 | 2%<br>Forecast<br>2028/29 | 2%<br>Forecast<br>2029/30 | 2%<br>Forecast<br>2030/31 |
| <b>Capital Income</b>                |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| WALBA Grant Urban Fence              |                   |                   |                           | 21,000                    |                           |                           |                           |                           |                           |                           |                           |                           |
| WALBA Grant CCTV                     | 0                 | 0                 | 0                         | 0                         | 21,000                    | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         |
| <b>Capital Expenditure</b>           |                   |                   |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Wilcannia Milestone 1                |                   | 10000             |                           |                           |                           | 10000                     |                           |                           |                           |                           |                           |                           |
| Wilcannia Milestone 2                |                   | 5000              |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Wilcannia Milestone 3                |                   |                   |                           |                           | 5000                      |                           |                           |                           |                           |                           |                           |                           |
| Ivanhoe Milestone 1                  |                   | 40000             |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Ivanhoe Milestone 2                  |                   |                   | 10000                     |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Merindee Milestone 1                 |                   | 6000              |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Merindee Milestone 2                 |                   | 5000              |                           |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| Tibo Milestone 1                     |                   | 5000              | 5000                      | 5000                      |                           |                           |                           |                           |                           |                           |                           |                           |
| Tibo Milestone 2                     |                   |                   |                           |                           | 15000                     |                           |                           |                           |                           |                           |                           |                           |
| Tibo Milestone 3                     |                   |                   |                           |                           |                           | 5000                      | 6000                      | 6000                      | 6000                      |                           |                           |                           |
| Sunset Strip closure                 |                   | 10,000            | 1,000                     | 1,000                     |                           |                           |                           |                           |                           |                           |                           |                           |
| Sunset Strip alternative             |                   |                   | 500                       | 500                       | 500                       | 500                       | 500                       | 500                       | 500                       |                           |                           |                           |
| Staff training                       |                   |                   | 3,000                     |                           |                           |                           |                           |                           |                           |                           |                           |                           |
| CCTV Merindee, Ivanhoe, Wilcannia    | 0                 | 63,000            | 24,500                    | 6,500                     | 50,500                    | 15,500                    | 6,500                     | 6,500                     | 6,500                     | 6,500                     | 0                         | 0                         |
| <b>Net Capital Surplus (Deficit)</b> | <b>0</b>          | <b>(83,000)</b>   | <b>(24,500)</b>           | <b>(6,500)</b>            | <b>(26,500)</b>           | <b>(18,500)</b>           | <b>(6,500)</b>            | <b>(6,500)</b>            | <b>(6,500)</b>            | <b>(6,500)</b>            | <b>0</b>                  | <b>0</b>                  |
| <b>Reserve Transfer</b>              | <b>371,437</b>    | <b>219,037</b>    | <b>257,678</b>            | <b>266,221</b>            | <b>270,276</b>            | <b>280,461</b>            | <b>214,760</b>            | <b>323,175</b>            | <b>327,226</b>            | <b>340,813</b>            | <b>347,732</b>            |                           |
| Waste reserve balance 1 July         | 352,000           | 763,437           | 982,474                   | 1,235,152                 | 1,531,373                 | 1,810,649                 | 2,110,100                 | 2,424,899                 | 2,740,020                 | 3,073,764                 | 3,414,608                 | 3,767,396                 |
| Cash Result for year                 | 371,437           | 219,037           | 257,678                   | 266,221                   | 270,276                   | 280,461                   | 314,760                   | 323,175                   | 327,226                   | 340,813                   | 347,732                   |                           |
| <b>Waste reserve</b>                 | <b>723,437</b>    | <b>982,474</b>    | <b>1,235,152</b>          | <b>1,531,373</b>          | <b>1,810,649</b>          | <b>2,110,100</b>          | <b>2,424,899</b>          | <b>2,740,020</b>          | <b>3,073,764</b>          | <b>3,414,608</b>          | <b>3,767,396</b>          |                           |

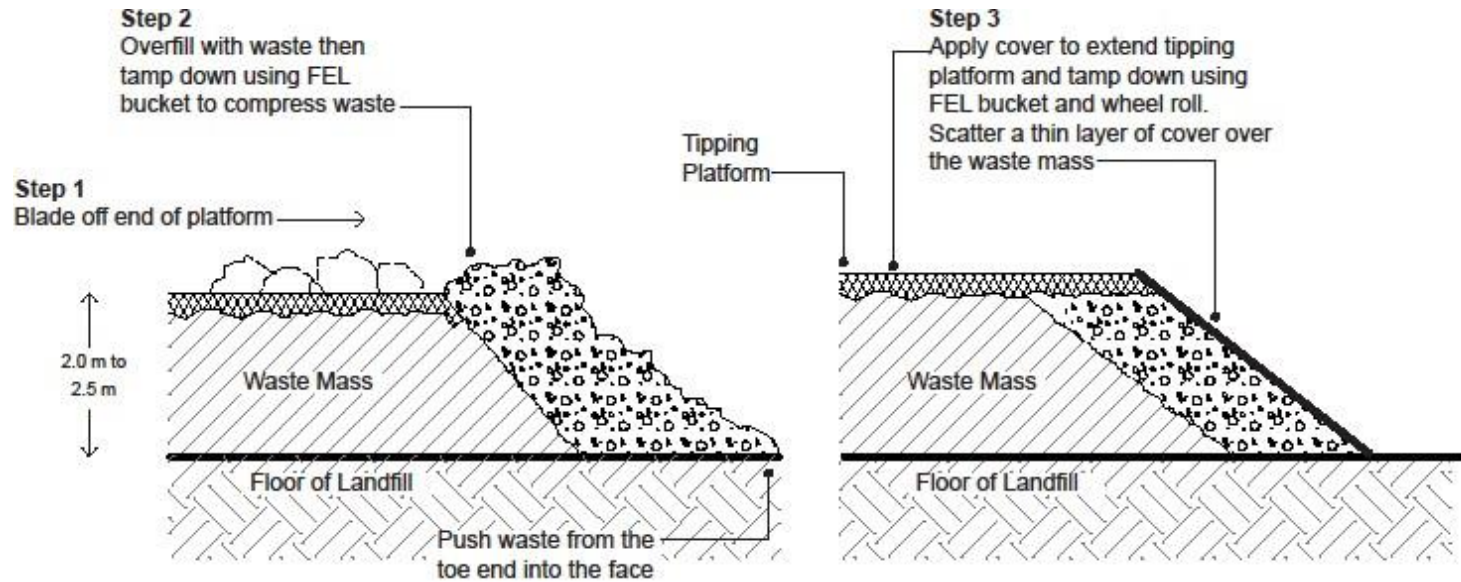
## Notes to Accompany Adjusted Model

- increased DWMC by 20,000 to reflect SS inclusion
- removed SS special rate
- increased Menindee DWM collection costs by \$12,000
- removed SS management costs
- increased Wilcanna landfill mgt costs by 30% pa
- increased Menindee landfill mgt costs by 30% pa
- increased Ivanhoe landfill mgt costs by 30% pa
- included milestone capital costs for waste facilities
- added WLRM grant funding for CCTV and litter fences @ 70:30
- added SS monitoring (operational) and aftercare (capital)
- added staff training for implementation of LTPoM

## What the model reveals

1. Operational income exceeds operational expenditure sufficiently to enable the implementation of the LTPoM works to proceed
2. Operational expenditure for the management of the Menindee, Ivanhoe and Wilcanna waste facilities can increase beyond the 30% proposed in the LTPoM as reflected into the adjusted financial model
3. The Waste Reserve will continue to accumulate

## 6. APPENDIX 1 – WASTE PLACEMENT TECHNIQUE



Note – Tamp down the exposed waste with the FEL bucket from the top and then, if accessible, from the toe area push any loose waste into the leading face. Then tamp in the exposed waste with the FEL bucket. Scatter some soil over the leading face from the top (and from the bottom, if accessible) after tamping is completed. This will save cover material and reduce windblown litter

### WASTE PLACEMENT TECHNIQUE USING FEL ONLY

## APPENDIX 2 - POLLUTION DEFENCE

The EPA enforces strict rules for land pollution to deter illegal dumping of waste including asbestos, waste tyres, hazardous waste, and restricted solid waste. There is a defence against a land pollution charge for unlicensed landfills, if those facilities maintain certain minimum standards.

By setting minimum operational standards for unlicensed landfills across NSW, the [Protection of the Environment Operations \(Waste\) Regulation 2014](#) (Waste Regulation) provides a defence to land pollution at unlicensed landfills.

This defence to potential prosecution under section 142 of the POEO Act would be available if the landfill operator, at the time of the alleged land pollution, maintained these minimum standards at their facility.

These standards include measures to

- reduce fire risk
- reduce odour, noise and dust
- control public access to the site
- generally maintain the facility

These minimum standards are not a mandatory practice, however, they do provide a defence for operators against potential prosecution for land pollution under section 142 of the POEO Act.

### **Actions proposed in the operation of Central Darling Shire Council's waste facilities to achieve pollution defence**

- provide mobile litter fences and increase the frequency of litter collection and for waste placement, compaction and covering at the landfill sites
- erect signage advising that the lighting of fires is prohibited
- provide CCTV surveillance at the Wilcannia, White Cliffs, Ivanhoe and Menindee waste facilities
- use crushed green waste for erosion and dust control over disturbed surfaces
- adopt improved practices that will reduce the potential for the generation of leachate
- train staff in the delivery of the LTPoM