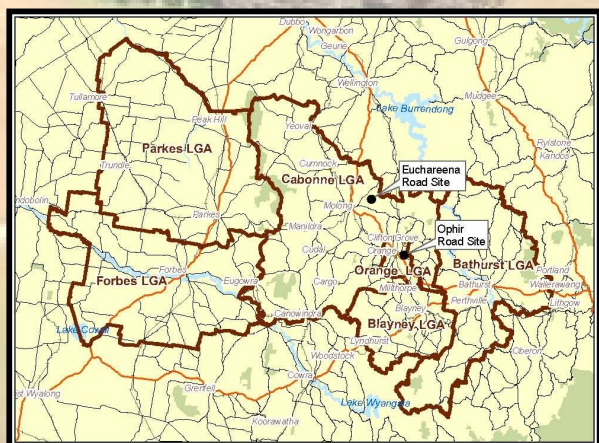




Orange City Council

Orange Resource Recovery and Waste Management Project Environmental Assessment



**Volume 1 – Main Report
September 2009**



Submission of Environmental Assessment

Prepared under the Environmental Planning and Assessment Act 1979, Section 75H

Environmental Assessment prepared by	Name:	David Gamble
	Qualifications:	Bachelor of Engineering (Mechanical) Bachelor of Economics Master of Engineering Science (Waste Management)
	Address:	GHD Pty Ltd 10 Bond Street Sydney NSW 2000
	In respect of:	Orange Resource Recovery and Waste Management Project.
Development Application	Applicant name:	Orange City Council
	Applicant address:	Byng St, Orange, NSW
	Land to be developed:	The Project is to be carried out on land as shown in the Environmental Assessment.
	Lot no, DP/MPS, vol/fol etc	Ophir Road RRC: Lots 22 and 23 DP 229513, Lots 2, 3, 4, 5, 7 and 8 DP 221529, Lots 102 and 103 DP 1113653, part of Lot 61 DP 790515. Euchareena Road RRC: on Lot 10, DP 1034198, Parish of Copper Hill, County of Wellington
Environmental Assessment	An Environmental Assessment is attached.	
Certificate	I certify that I have prepared the contents of this Statement and to the best of my knowledge: - It is in accordance with the requirements of Part 3A; - It contains all available information that is relevant to the Environmental Assessment of the development; and - That the information contained in the Environmental Assessment is neither false nor misleading.	
	Signature	
	Name	David Gamble
	Date	10 Sept 2009



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Appendix J – Surface Water Assessment Report – Euchareena Road RRC

Appendix K – Groundwater Assessment Report – Euchareena Road RRC

Appendix L – Flora Assessment Report – Euchareena Road RRC

Appendix M – Fauna Assessment Report – Euchareena Road RRC

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Appendix N – Aboriginal Heritage Assessment Report – Euchareena Road RRC

Appendix O – Air Quality Assessment Report – Euchareena Road RRC

Appendix P – Traffic and Transport Assessment Report – Euchareena Road RRC

Appendix Q – Noise Assessment Report – Euchareena Road RRC

Appendix R – Sustainability Assessment Report

Appendix S – Greenhouse Gas Assessment Report

Appendix T – Risk Analysis for Transmission of American Foul Brood Disease

Appendix U – Robert Gulliford Report

Appendix V – Financial Assessment Report

Executive Summary

INTRODUCTION

Orange City Council is proposing an integrated plan for improved resource recovery and residual waste management for the Orange local government area (LGA), and to address the current situation where the landfill space at the Ophir Road site allocated for municipal and commercial wastes is predicted to be consumed by mid 2013.

The Project would improve diversion from landfill from the current 18%-20% to 58%, thereby contributing to achievement of the 2007 *NSW Waste Avoidance and Resource Recovery Strategy* targets for diversion of waste from landfill.

This Environmental Assessment has been prepared by GHD Pty Ltd (GHD) in accordance with the requirements of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared to support an application to the NSW Minister for Planning for approval of the Project and to address the requirements of the Director-General of the NSW Department of Planning (the Director-General's requirements) dated 14 April 2009.

THE PROPONENT

The proponent for the Project is Orange City Council. The council (established 1860) is a democratically elected local government body, responsible for providing services to the residential, industrial and commercial community of approximately 40,000 people and to visitors of the city and surrounding areas. Some 3,500 people from surrounding shires work in Orange. The council provides physical infrastructure as well as environmental, social and cultural services for use by the residents of both the City and the surrounding areas. Furthermore, the council aims to maintain the natural heritage of the area and strives to attract appropriate value-adding development and investment into the region.

THE PROJECT

The Project includes new operations at two separate sites owned by the Proponent:

- ▶ The existing Ophir Road Resource Recovery Centre (RRC) located approximately 5 km north east of Orange central business district; and
- ▶ The proposed Euchareena Road Resource Recovery Centre (RRC) located approximately 44 km from Orange and 5 km northeast of Molong. The Euchareena Road Site covers an area of 192.6 ha.

The location of the two sites within the regional context is shown at Figure 0-1.

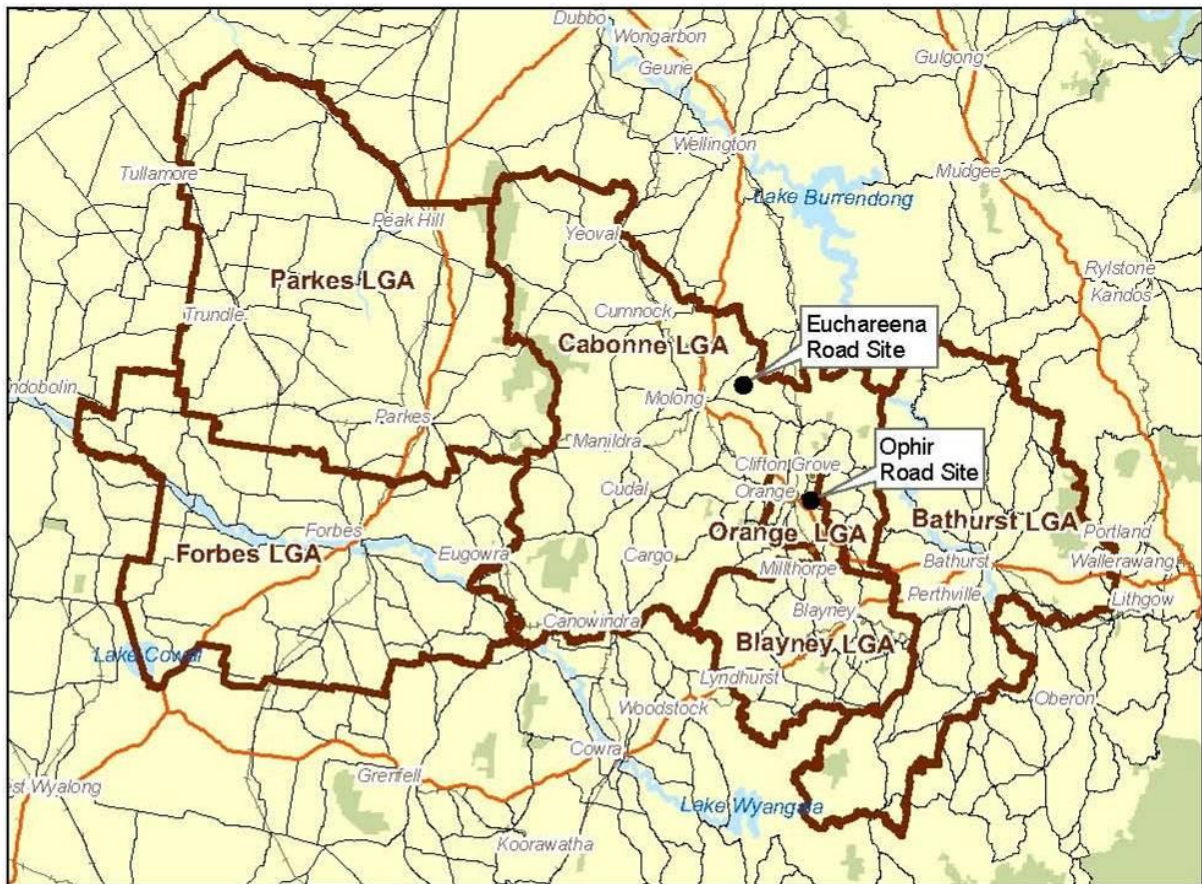


Figure 0-1 Regional context

The following new infrastructure, for which project approval is sought, would be provided at each site:

- ▶ Ophir Road RRC – A new materials recovery facility (MRF) building, for the existing or new MRF equipment to service Orange and five other regional councils under the current kerbside recycling arrangements, plus a waste baling operation within the existing MRF building, which would be modified to suit the equipment and permit short term storage of bales;
- ▶ Euchareena Road RRC – A new enclosed tunnel composting plant for separately collected food and garden organics with a biofilter, associated roads, outdoor compost maturation and refining areas, plus a landfill to receive bales of waste from Ophir Road and other regional sources (if required), and unbaled materials deemed unsuitable for baling, associated access roads, a weighbridge, site amenities, and vehicle parking areas.

The key components of the Project are summarised in the following table:

Key components of the Project

Aspect	
Ophir Road Resource Recovery Centre	
Proposed key infrastructure	Baling facility Relocated MRF
Proposed ancillary infrastructure	Internal roads
Proposed baling facility throughput	Approximately 20,000- 26,000 t/yr
Proposed relocated MRF throughput	Approximately 10,000 – 13,000 t/yr
Hours of operation	Public access: 8 am – 5 pm, 7 days Operation: 7 am – 6 pm, 7 days Waste receipt: 7 am – 6 pm, 7 days
Number of employees	Current: 7 (landfill, gatehouse, resource recovery), 34 (material recovery facility and collections) Proposed during operation: 7 (baling plant, landfill, gatehouse, resource recovery), 34 (material recovery facility and collections) Proposed during construction: 20
Euchareena Road Resource Recovery Centre	
Proposed key infrastructure	Baled waste landfill Enclosed tunnel composting facility
Proposed ancillary infrastructure	Weighbridge and gatehouse External roads and intersection Stormwater management Leachate management Fences Power supply Internal roads Amenities Car parking
Proposed Euchareena Road landfill capacity	1.5 million m ³
Proposed Euchareena Road landfill filling rate	Approximately 30,000 – 45,000 t/yr
Proposed composting facility capacity	Approximately 15,000 – 20,000 t/yr

Aspect

Hours of operation	No public access Landfill operation: 7 am – 6 pm, Monday to Friday Enclosed tunnel composting facility operation: 7 am – 6 pm, Monday to Friday Enclosed tunnel composting process: continuous (no moving parts) Waste receipt: 9 am – 3 pm (+after 4:30 pm – 6 pm), Monday to Friday (except in cases of emergency)
Number of employees	Current: 0 Proposed during operation: 6 Proposed during construction: 20

OVERALL STRATEGY

The project forms part of the overall strategy for resource recovery and waste management for Orange, which involves five new activities:

1. New residential food/garden organics waste collection service

The new kerbside collection service would be provided to all households in Orange, as well as the villages of Spring Hill and Lucknow, to capture domestic food and garden organics in a single special purpose mobile garbage bin. Some defined capacity for regional councils to access a similar service is included in the Project.

2. Processing of food/garden organics at the Euchareena Road RRC

Food and garden organics from domestic and commercial services would be delivered direct to the Euchareena Road RRC and composted using a new Alternative Waste Technology (AWT) facility to produce high grade compost for use in regional and local farms and gardens. Food waste generated by businesses would also be diverted to the AWT facility, for composting in combination with the residential organic stream.

3. Recovery of dry recyclable materials at the Ophir Road RRC

The existing Orange City and regional kerbside recycling system would be maintained and improved by securing beneficial use of a proportion of glass fines produced in MRF processing of recyclables and by extending the application of event-based recycling. Recyclables would be sorted at a new MRF to be constructed within the Ophir Road RRC.

Streamed recyclable commercial and industrial (C&I) and construction and demolition (C&D) materials would be consolidated and stored according to material type pending aggregation of sufficient quantities for efficient transport to markets.

4. Baling of mixed residual waste at the Ophir Road RRC

Mixed residual domestic waste (with most of the food and garden organics removed) would be delivered to a new facility at the Ophir Road RRC for consolidation and primary sorting/recovery of gross recyclable materials. The primary-sorted waste would then be compacted and baled for transport to the Euchareena Road RRC and safe disposal.

Mixed dry residual C&I and C&D waste from which no further value can be efficiently gained would be loaded into skips for transport to the Euchareena Road RRC and safe disposal. Some defined capacity for regional councils to access a similar service is included in the Project.

5. Disposal of mixed residual waste at Euchareena Road RRC

The baled mixed residual waste delivered to the Euchareena Road RRC would be disposed of in a specially designed landfill. Wastes loaded into skips, and other wastes unsuited to baling, would be separately transported to the Euchareena Road RRC also for landfill disposal.

Key resource recovery outcomes from implementation of the Orange City *Resource Recovery and Waste Management Strategy* are summarised in Box 1.

Box 1 Key resource recovery outcomes of the Resource Recovery and Waste Management Strategy for Orange

Waste recovery and diversion from landfill – 58% overall:

- ▶ 63% of municipal waste generated.
- ▶ 53% of C&I waste generated.
- ▶ 53% of C&D waste generated.

Organic waste diverted from landfill for production of high quality compost:

- ▶ 9,100 t/yr of municipal food/garden organics.
- ▶ 2,061 t/yr of C&I food/garden organics.
- ▶ 3,650 t/yr of sewage biosolids.

Dry recyclable materials captured and recycled:

- ▶ 2,883 t/yr of kerbside collected municipal paper/cardboard, container recyclables and glass fines.
- ▶ 4,053 t/yr of C&I and C&D recyclables – paper/cardboard, timber, glass, steel, etc.

Garden waste processing for production of mulch:

- ▶ 3,000 t/yr of municipal garden waste.
- ▶ 471 t/yr of C&I garden waste.

Virgin excavated natural material diverted from landfill:

- ▶ 12,050 t/yr of VENM for Ophir Road landfill capping and remediation, and blending into soil products.

REGIONAL INITIATIVE

This Project is a regional initiative for central west New South Wales, utilising new facilities located in the Orange City and Cabonne local government areas. It involves relocating the MRF on the current site, which is currently utilised by five other Regional Councils for processing their kerbside recyclables. The materials rejected from the MRF as unsuitable for recycling currently go into the Ophir Road landfill. In future those rejected materials will be disposed of to the proposed new landfill at the Euchareena Road RRC. An available landfill is an essential component of an effective recycling facility and the Euchareena Road RRC will perform that important function in the continuation of recycling for the LGAs in the region.

The enclosed tunnel composting plant at Euchareena Road RRC would also be available for these other councils, who may not otherwise be in a position to fund such technology, due to their significantly lower waste quantities. Without such affordable AWT technology, these councils may not be able to achieve significant diversions of waste from landfill, and meet their obligations under the NetWaste Strategy and in accordance with NSW State Government Waste Strategy targets or targets set out in the Draft *NSW State Plan* (2009). Sending food/garden organics to the enclosed tunnel composting plant would allow these councils to reduce their greenhouse gas emissions, and also extend the time before they run out of landfill space.

The Project is therefore critical to the Orange and the Central West region making significant progress towards meeting the NSW Waste Strategy targets. The baling plant and baled waste landfill are also available for other councils, including Cabonne (which was formerly a joint venture partner from 2000 - 2009), to access on a commercial basis. For councils that are predicted to run out of landfill space over the next few years, the Euchareena Road RRC would provide them with a state of the art facility that would meet Department of Environment, Climate Change and Water (DECCW) requirements and minimise their environmental liabilities.

THE ENVIRONMENTAL ASSESSMENT PROCESS

On 25 September 2008, the NSW Director-General of Planning as delegate for the NSW Minister for Planning formed the opinion that the proposed Orange Resource Recovery and Waste Management Project is a major project to which Part 3A of the EP&A Act applies.

The NSW Minister for Planning is the approval authority for the Project, and an Environmental Assessment (this document) is required to support the application for project approval in accordance with the requirements of Section 75 of the EP&A Act.

CONSULTATION

Statutory consultation was undertaken, according to the Director-General's requirements, during preparation of the Environmental Assessment. Stakeholder comments have been addressed in the Environmental Assessment. In addition, consultation was undertaken with the local and wider community to create awareness in the community about the Project. This was achieved through a range of methods including information newsletter distribution, media releases, advertisements in local newspapers and television, community information days, community focus groups, two 'Bang the Table' forums, development of a project website and a project 1800 number.

NEED AND JUSTIFIABLE DEMAND

Capacity/demand position at the Ophir Road landfill

Remaining capacity of the Ophir Road Landfill at end June 2009 is estimated as 230,000 m³ or 230,000 t. Landfill capacity is currently being drawn down at a waste input rate of around 54,000 t/yr (2007/08). At the current waste input rate, the remaining life of the Ophir Road landfill facility is less than four years, with closure likely in mid 2013.

The Project would increase the level of resource recovery to 58%¹. Despite this very high level of resource recovery, nearly 28,000 t/yr of residual waste would require disposal.

¹ This exceeds the current level of resource recovery for Sydney – which is assisted by a waste disposal and environment levy currently at nearly \$47/tonne.

A further consideration is the need to reserve a measure of landfill capacity for emergency disposal requirements such as natural disasters. Contingency capacity is a critical requirement for any community waste facility.

Alignment with the provisions of the NSW Waste Avoidance and Resource Recovery Strategy

The Project is fully aligned with the NSW Government's direction for waste as expressed in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*. The Project is built around a high level of food/garden organics recovery (from both municipal and C&I sectors) in order to maximise diversion of organics from landfill. The Project assists in meeting the Draft *NSW State Plan (2009)* greenhouse gas reduction targets. It also features improved recovery and recycling of household paper and containers collected through the kerbside recycling scheme. The Proponent's *Resource Recovery and Waste Management Strategy* will also focus on improving of business sector resource recovery (both C&I and C&D) to recycle paper, timber, metals and plastics.

Alternative existing waste disposal landfill sites

Alternatives involving transportation of residual waste, after separate collection of organics and composting at Euchareena Road RRC (as per the Project), or all wastes (excluding virgin excavated natural material) to an existing landfill already in operation at a regional centre, have been explored. A landfill facility with significant future airspace exists at Dubbo, some 150 km from Orange (a 300 km round trip). Transportation of residual wastes to Dubbo for disposal by either road or rail is disadvantaged by the prohibitive transport distances involved, the foregone opportunity for beneficial waste processing and resource recovery in Orange and the surrounding region, and the consequent scale of the residual waste transport task.

The scheme is further disadvantaged by the probable need for the landfill host to gain appropriate statutory approvals to receive substantially increased waste tonnages. The current approval for the Dubbo facility was obtained many years ago, and the ability of the host to use this approval for substantially increased tonnages is uncertain. A proposal to utilise a former gold mine at Parkes has similar disadvantages (a distance of over 100 km each way) coupled with the fact that it has no approval to operate as a landfill, and would likely remain in private ownership during and after use as a landfill.

Potential to crowd-out resource recovery actions

The facilities provided by this project would provide a greatly improved level of resource recovery compared to current facilities. However, with this and other advanced resource recovery schemes, landfill based disposal arrangements are necessary for residual wastes from which no further value can be efficiently gained. This includes process residuals and those materials which are unsuited for processing.

The proposed new landfill facility at Euchareena Road RRC for disposal of residual waste is an integral part of the multi-faceted waste strategy. The landfill is the final activity in an integrated set of resource recovery initiatives comprising the waste strategy.

Protection of the environment

The Proponent recognises the importance of improving environmental standards for landfill design and management. This Environmental Assessment demonstrates a landfilling philosophy based on the idea of actively avoiding landfill disposal of much of the greenhouse gas-forming food/garden organics generated by the community and business. Processing of this organic material to create compost averts

its potential to form harmful greenhouse gases during biodegradation in a landfill. In addition, responsible management of the landfill by the Proponent would enable landfill gas management measures to be implemented to minimise the emissions of methane to the environment, and thereby minimise the likelihood that Orange residents would be liable for purchasing Carbon Pollution Reduction Scheme (CPRS) permits under the scheme being considered by the Commonwealth Government.

Removal of organics from the residual waste stream and separate processing would also minimise the biologically active content of leachate in the landfill. Any leachate created through rainfall on the active cell areas would be captured and transferred to the Orange Wastewater Treatment Plant for processing.

This environmentally sound landfilling philosophy is also distinguished by the decision that household and commercial residual wastes would be compacted and baled for transport from Orange to the proposed Euchareena Road RRC. This would minimise the number of truck movements associated with the transfer of these wastes from the Ophir Road RRC to the Euchareena Road RRC, minimising traffic impacts. The waste would be buried while still in the compacted state, largely eliminating the risk of propolis foraging by honey bees and protecting the local environment from the potential effects of wind-blown litter, odour, and vermin/vector strike.

ENVIRONMENTAL ASSESSMENT

Soils and Land Capability

Ophir Road RRC

Construction works impacting on soils would comprise earthworks for the new MRF building, batters and associated manoeuvring area and access road. The Project would not affect current site activities such as continuation of the existing landfilling activities on site and would therefore not have any adverse impacts on land capability. The soils of the site are not considered to be restrictive to the Project by virtue of exhibiting qualities that would be adversely impacted by the Project.

Euchareena Road RRC

The identification of the topsoil and subsoil resources on site and their properties and the adoption of the proposed mitigation measures would enable the planned disturbance of topsoil and subsoil to proceed without any adverse impacts. The use of correct stripping, stockpiling and replacement methods would ensure that the overall impacts on the soil resources is minimal.

Progressive replacement of topsoil and subsoil on completed landforms would enable the land capability of the disturbed area to ultimately be similar to those of the existing land. Revegetation of the final surface of the landfill in the manner proposed would enable improved pasture and ongoing grazing across the entire landfill surface, i.e. once it is fully stabilised. The opportunity would exist for selected cropping of low-rooted shrubs and grasses, particularly those suited for nectar production. Overall, the changed practices on the Euchareena Road Site and increase in native vegetation would have some beneficial ecological impacts, whilst retaining comparable land capability and agricultural suitability.

Surface water

Ophir Road RRC

The additional road and hardstand areas and new MRF building would create additional runoff. This runoff would be captured and piped to the existing gross pollution trap and disposed of to the surface

water pond in the north eastern corner of the site. There is sufficient capacity within the existing system to support the additional stormwater generated.

Euchareena Road RRC

The surface water management and maintenance controls proposed for the Euchareena Road RRC would provide a high level of impact mitigation. The location of the Euchareena Road site in a depression on the crest of a ridge and the gently sloping topography would minimise the potential environmental impacts from surface water runoff. There would be no runoff from external catchments into the operational areas of the site, meaning that the water management facilities only need to cater for runoff generated within the site. The main facilities are located where runoff would not drain to other parts of the site or can be easily controlled. Sufficient surface water would be able to be collected for on-site use.

Groundwater

There are no groundwater impacts of the proposed MRF building at Ophir Road RRC.

At the Euchareena Road RRC, the existing natural clays beneath the landfill site on the Euchareena Road Site exhibit very low permeability (5×10^{-10} m/s to 2×10^{-8} m/s). However, the landfill floor would be excavated and re-compacted to achieve a permeability of $<1 \times 10^{-9}$ m/s (9×10^{-5} m/d) for a depth of at least 0.9 m. Beneath this compacted zone, a further 15 m to 20 m of in-situ saprolitic clay exists that would act as an additional barrier to leachate migration.

No leachate ponds would be used at the Euchareena Road RRC. Instead, leachate would be stored below the landfill, in a specially lined sump area. The potential for leachate infiltration to groundwater from the landfill would be minimal due to the presence of a high density polyethylene (HDPE) liner within the landfill sump area, and the underlying low permeability of the compacted clay layer, and in-situ saprolitic clay, as described above.

Groundwater simulation modelling of two different scenarios was carried out. This predicted that under design conditions (Scenario 1), a groundwater mound would develop beneath the Euchareena Road Site and if infiltration/seepage were to continue for 100 years, the mound would be approximately 5 m high and contained totally within the Euchareena Road Site perimeter. In the unlikely event of a potential breach in one part of the low permeability compacted clay floor (Scenario 2), the modelling predicted a slightly larger groundwater mound extending approximately 100 m further than the Scenario 1 prediction.

Biodiversity

Ophir Road RRC

No vegetation would be required to be removed to construct the new MRF, adjacent manoeuvring area, access roads, or stockpile areas. In this regard, there is unlikely to be any impact on the habitat for any threatened fauna species. The Project is not expected to have an impact on any threatened flora species or endangered ecological communities at the Ophir Road Site, as none are present.

Euchareena Road RRC – Flora

The Euchareena Road Site has previously been highly modified from its original condition and habitat values as a consequence of its use as a grazing and farming property over many years.

There is no suitable habitat present at the site for many of the threatened flora species likely / predicted to occur there. Field observations have failed to record any threatened flora species and there are no

past records of any threatened flora species at the site. There are no endangered flora populations or occurrences of critical habitat recorded for the site.

However, two remnants of the White Box, Yellow Box, Blakely's Red Gum Community [Endangered] [NSW *Threatened Species Conservation Act*] or the White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland [Critically Endangered] [Commonwealth *Environment Protection and Biodiversity Conservation Act*] occur at the Euchareena Road Site. These remnants would not be affected by the Project. Moreover, they would be linked again by proposed revegetation works. Some isolated paddock trees that are typical components of the tree layer within the endangered ecology and are in varying states of health would be removed.

The assessments and field survey observations concluded that it is unlikely that there would be any impact on any of the threatened flora species recorded or predicted to occur in the wider region within the boundaries of the Molong 1: 100 000 scale map sheet area.

Euchareena Road RRC – Fauna

The connectivity and conductivity of the existing habitat on the Euchareena Road Site would be enhanced through the planting of vegetative screens and the 13.6 ha of rehabilitated woodland (hence a net increase of habitat) linking the two remnant areas. No further habitat fragmentation or isolation of habitat would occur as a result of the Project. Given that no significant habitat on the Euchareena Road Site is to be adversely impacted, it is concluded that the Project is:

- ▶ Unlikely to significantly affect any of the listed threatened species, fauna populations or communities;
- ▶ Unlikely to augment or significantly contribute to any of the Federal or State listed key threatening processes, if the appropriate safeguards regarding the control of potential vertebrate pests are effectively applied;
- ▶ Unlikely to significantly affect any Ramsar wetland or any CAMBA or JAMBA listed species;
- ▶ Unlikely to significantly affect any of the creeks if adequate water run-off safeguards and possible seepage from the site are adopted; and
- ▶ Consistent with ESD principles with regards to fauna and would not adversely affect the local biodiversity and no issue of inter-generational or value added matters are relevant in this instance.

Apiary industry issues

The level of impact(s) of the Project upon the local apiary industry has been assessed through a statistical assessment conducted by Emphron Informatics Pty Ltd and review of the Project and proposed measures by a former Department of Primary Industries apiary inspector, Mr Bob Gulliford. A critical outcome from the risk assessment relates to the occurrence of American Foul Brood (AFB) spores in honey sold in the Orange City and Cabonne LGAs. Analyses of 38 honey samples collected at a range of retail and other outlets identified that whilst approximately 70% of honey sampled contained AFB spores, the spore burden is too small for there to be any meaningful risk of AFB contamination from retail honey residues.

In order to undertake the statistical assessment of risk of AFB being transmitted from the Euchareena Road Site, probability of infection was established to be dependent upon a combination of the following:

1. The distribution of the number of contaminated honey jars reaching the landfill site in each load or bale.

2. The number of bales that are compromised or broken potentially exposing honey jars.
3. The distribution of the length of exposure for each contaminated honey container.
4. The probability that foraging bees will be active during the exposure period for a contaminated honey container (this is driven by temperature).
5. The probability that an active foraging bee will locate any exposed honey container.
6. The probability that such an exposed honey container will be contaminated with AFB spores.
7. The probability of infection of the hive arising from contact with a single bee.
8. The probability that a foraging bee will successfully recruit other bees to the contaminated exposed honey container.
9. The relevance of access opportunities to propolis.

The detailed computer simulations reflecting each of the above nine considerations when evaluated collectively show that the yearly probability of AFB infection of bee hives would effectively be zero whilst the average time for a bee hive to become infected at distances of 500 m is one in 890 years. At a distance of 3 km the infection interval would be in the order of one in 1 million years.

The overall impact of the Project would be beneficial to the apiary industry throughout the region, as it provides an opportunity for closure of many of the local council-operated unsupervised landfills in the region that are currently capable of allowing bees access to honey containers. Further, the improved supervision/signage and separation of wastes at regional waste transfer stations that would replace these landfills would reduce the potential for any foraging bees gaining access to residue honey in containers. Banning disposal of honey production products to the Euchareena Road landfill (as is already the case at the Ophir Road RRC) would reduce risks across the entire region, once many small landfills cease to operate.

Overall, the biosecurity safeguards associated with the Project (baling of waste, banning disposal of honey containers at Euchareena Road) would minimise the potential impacts upon the local apiary industry. According to the Department of Primary Industries, the standard of management proposed would be far superior to practices currently adopted at the existing landfills throughout the region and elsewhere in country NSW. The detailed assessment of this issue has led to the development of a range of specific mitigation measures (previously described) that would reduce the risk of transmission of AFB spores to a level that virtually removes all opportunities for bees contracting the AFB disease or access to propolis. Each of the mitigation measures has been developed to provide a high level of certainty that practices at the Euchareena Road RRC would not adversely affect surrounding apiarists.

Aboriginal heritage

Ophir Road RRC

As outlined throughout this Environmental Assessment, the Ophir Road Site is highly disturbed. Throughout all activities previously undertaken on site there are no items of Aboriginal heritage significance have been uncovered. There are no known Aboriginal Heritage sites located on the Ophir Road Site.

Euchareena Road RRC

A field survey conducted in 2003 identified evidence of Aboriginal use of the local area. Some artefacts (an axe and muller) were found on the site in an area that would be disturbed by the Project. A scarred tree, which has some significance, survived clearing due to its location amongst large boulders at the base of a short steep slope. This tree is located within the woodland vegetation area, which has been designated for conservation and enhancement; hence there would be no impacts on the tree from the Project activities.

The original location of the artefacts is uncertain, but provided the consultation process is conducted as recommended and the relocation of the artefacts is conducted under a Permit, the impact of the Project on these items of Aboriginal heritage is considered acceptable.

Based on the impact assessment for the two identified sites, and in the absence of any defined artefactual context or places of Indigenous cultural significance within the footprint of the proposed impact area, there would be no archaeological or cultural impacts caused by the Project.

European heritage

No items of European heritage significance are located at the Ophir Road RRC, or in the vicinity of the Euchareena Road Site. Only two items are located adjacent to the proposed transport route to the Euchareena Road Site. As this is already used by trucks, with implementation of the proposed management controls, no impact is anticipated.

Hazards

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development aims to ensure that appropriate measures are employed to minimise the impacts of developments that are deemed to be either 'hazardous' or 'offensive'. Under SEPP 33, the Project is considered to be potentially offensive because waste related activities could potentially impact on the surrounding localities, even after measures are taken to reduce or minimise the potential impacts.

However, the Project is not considered hazardous, as environmental controls proposed for the Project would limit the potential health risk to workers and nearby residents and risk to the biophysical environment. Mitigation measures for these risks are outlined in the various sections of this Environmental Assessment.

SEPP 33 requires that potentially hazardous or offensive developments are publicly advertised under the same requirements as for designated developments. Community consultation has been carried out as per these requirements and in accordance with the EP&A Act.

Ophir Road RRC

The proposed baling plant at Ophir Road would result in no net increase in the level of hazards that local residents would be exposed to. As residents would not be permitted to deliver waste and recyclables to any area other than the Resource Recovery Centre, or to bulk drop-off areas (garden organics or separated concrete) this would minimise the level of hazards that they would be exposed to.

As there would be less commercial vehicles delivering waste to the site than in the past, the level of hazard associated with heavy vehicles for local residents in the vicinity of the site, or using the site to drop off wastes or recyclables, would be significantly reduced.

Euchareena Road RRC

There would be two separate facilities on the site – an enclosed tunnel composting plant, and a new landfill. Neither of these facilities would be considered as hazardous. Normal levels of hazard and risk associated with industrial sites and many construction sites would exist for site workers. These would be managed through development and implementation of a site operations plan.

No dangerous goods would be stored on site, apart from small quantities of paints and solvents, used for equipment maintenance, and herbicides used for controlling weeds on site. However, all such chemicals would be stored within a building in accordance with standard dangerous goods storage practices. Diesel fuel for on-site machinery would be stored in a double skin tank, located near the landfill site.

Air quality and odour

Ophir Road RRC

Air quality modelling indicates that the Project would meet the project air quality goals for particulate matter during both construction and operation. At all assessment locations, the odour concentrations associated with the proposed operations at the Ophir Road RRC are predicted to be significantly below the project goal of 6 OU. The air quality assessment report concluded that construction and operation of the proposed Ophir Road RRC would have a negligible impact on local air quality.

Cumulative odour impacts are predicted approximately 1.2 km from the wastewater treatment plant site, however these are driven by odour attributable to the wastewater treatment plant.

Given this comparatively small increase in local traffic, the air quality assessment did not anticipate that product transportation would impact significantly on the local air shed's capability to achieve the air quality goals associated with vehicle emissions (principally NO₂, SO₂ and hydrocarbons).

Euchareena Road RRC

The air quality assessment concluded that the Project would meet the project air quality goals for particulate matter during both construction and operation. The results of odour modelling for the Euchareena Road Site indicate that the odour concentration associated with the Project is predicted to be significantly below the project goal of 6 OU.

The relatively low volume of traffic along Euchareena Road (58 heavy vehicle movements) is not anticipated to impact significantly on the local air shed's capability to achieve the air quality goals associated with vehicle emissions (principally NO₂, SO₂ and hydrocarbons). Additionally, since all roads on the transportation route to the Euchareena Road Site are sealed, wheel-generated dust emissions off-site were assessed to be negligible.

The proposed activities within the Euchareena Road Site would be the only 'industrial' activity in the vicinity of the Site that has potential to emit air quality contaminants and as such, no cumulative impact assessment was required.

Traffic and transport

Ophir Road RRC

Approximately 20 construction workers would be travelling to and from the Ophir Road Site during the construction period. Using an estimated average of one vehicle per construction worker, this translates to 40 vehicle movements a day (20 in + 20 out). It has been assumed that up to 8 heavy vehicles would

need to access the site per day during construction. This would result in the generation of 16 truck movements on a typical weekday.

Impacts of construction traffic on the road network surrounding the site would be temporary and would be limited to the 12 month construction period.

An estimated 88 truck movements per day would be generated by operation of the facility (or 44 in/44 out), compared to current 80 truck movements (40 in/40 out) per day. This would be in addition to 72 light vehicle trips per day from employee/staff and residents (60 trips for residents + 12 for staff), which would be very similar to current levels. This translates to a total of 44 truck trips and 36 light vehicle trips to and from the site, compared to an estimated 40 truck trips and 36 light vehicle trips currently.

In terms of additional traffic on Ophir Road due to the Project, this is a minor increase compared to current traffic volumes. Hence the current level of service of Ophir Road would remain at Level of Service C.

The traffic and transport assessment concludes that the Project would have no adverse traffic-related environmental implications on traffic amenity, safety or traffic service levels, provided the proposed mitigation measures are undertaken. The Project, including the proposed access provisions, would meet the requirements and guidelines of the Roads and Traffic Authority in terms of road safety and network efficiency.

Euchareena Road RRC

Euchareena Road is an undivided two-lane rural road linking the towns of Molong and Euchareena that carries approximately 191 vehicles per day on average (95 northbound and 96 southbound).

Approximately 6.5% of these are heavy vehicles. The total traffic generated during the construction phase is estimated to be approximately 50 trips per day (25 in/ 25 out). The additional traffic volume generated during the construction phase is less than the traffic volume during the operational phase and therefore would have a lesser traffic impact on the surrounding road network.

Future traffic volumes based on a review of AADT traffic volume growth on adjoining roads within Cabonne LGA (1988 to 1999) suggested traffic flows on Euchareena Road would be expected to grow on average at around 2.5% annually, under favourable economic conditions within the region. This is considered to be a high estimate of likely average growth rate considering the effects of the recent economic slowdown.

An estimated 58 truck movements (representing 29 trucks) and 16 light vehicle movements (representing 8 light vehicles) per day would result from the Project on a typical day during the operational stage. Approximately 80% of the trucks would have their origins / destinations in Orange. These additional vehicles attributable to operation of the Euchareena Road RRC would increase total vehicle movements by approximately 30% based on current traffic levels. There are currently an estimated 220 vehicle movements per day along Euchareena Road (representing 110 vehicles), with 6.5% of this comprising heavy vehicles. Overall, the total number of vehicle movements predicted along Euchareena Road (294 movements per day, representing 147 vehicles) would remain at only 59% of the typical maximum for a minor rural road (500 vehicle movements per day).

With implementation of the proposed road improvements, commitment to ongoing road maintenance and a drivers' Code of Conduct, the Project is not expected to have adverse traffic-related impacts on traffic safety. Furthermore, the Project would meet the requirements and guidelines of the Roads and Traffic



Authority in terms of road safety and network efficiency. Orange and Cabonne Councils have recently agreed that the need for upgrades to the road would be independently assessed.

Noise

Ophir Road RRC

Construction activities would occur during the daytime period only. Normal activities would continue at the Ophir Road Site while construction of the new MRF building is being undertaken. The predicted LA10(15minute) noise emissions at the nominated residences from noise modelling indicates that noise emissions from construction activities under calm daytime conditions would be below the Ophir Road Site specific criteria at the nominated residences, which are about 300m from the proposed relocated MRF building.

The predicted LAeq(15minute) noise emissions from the operations on the site from noise modelling indicate that noise emissions from the daytime operational scenario under calm daytime conditions would be below the Ophir Road Site specific criteria at the nominated residences. Similarly, the predicted LAeq(15minute) noise emissions from occasional night-time operations on the site indicate that noise emissions from the night-time operational scenario under adverse conditions would be below the Ophir Road Site specific criteria at the nominated residences.

As there is no significant industrial noise from other developments in the locality, the cumulative noise emissions from the Ophir Road Site and other developments would be below the relevant acceptable amenity criteria for industrial noise (i.e. non-traffic related) during the daytime, evening and night-time periods.

Since the estimated number of vehicles travelling to and from the Ophir Road Site in the future would remain similar to existing numbers, the traffic noise levels would therefore remain generally the same for all the receivers in the vicinity of the Ophir Road Site.

Euchareena Road RRC

Construction activities during the site development phase would be undertaken during the daytime period only. Predicted construction noise for the Euchareena Road Site would be below the nominated criteria at the three closest residences (which are approximately 1 km from site operations), hence at all surrounding residences.

Predicted noise levels during operation of the Project would also be below project noise criteria. All predicted traffic noise at the residences adjacent to Euchareena Road complies with the daytime DECCW ECTRN criteria of 60 dB(A) for all stages of the Project.

Visual

Ophir Road RRC

The proposed MRF building would initially be visible from the abovementioned locations. However from these distances it would appear as a small building adjacent to those already existing. Further, once landfilling has been finalised, the central ridge of the site would obscure the MRF building from any external views. The other proposed improvements on site would not be visible external to the site.

In this regard, the proposed improvements and operation of the Ophir Road RRC would not have an adverse visual impact for the locality.

Euchareena Road RRC

Motorists travelling along both Euchareena Road and Shades Creek Road would be able to observe the various construction activities during the site establishment phase. The impacts of such observations would be minor given the relatively short construction period.

The construction of the northern visual amenity bund would immediately shield all activities from motorists travelling along Shades Creek Road and the more distant residences 'Maupus' and 'Meru' to the north. The progressive extension of the landfill area perimeter bund would also successfully shield the landfill area, such that there would be negligible visual impact.

In the longer term as the tree screens grow in height and thicken out, their effectiveness as screens for the landfill in the surrounding area would improve. In the longer term, the landfill may be visible from some distant vantage points, as it would rise to approximately 18 m above the current ground level. By this time, the trees would be well established with the rejuvenating woodlands and tree screens would contribute to a visually acceptable facility.

Financial assessment

A financial assessment of the Project has been undertaken. This has focussed on analysis of the extra costs that would be incurred as a result of proceeding with the Project, compared with two alternatives. The assessment did not include the costing of practices that would continue whether the Project proceeded or not, such as collection of municipal wastes and recyclables from residents, sorting of recyclables, nor did it include any revenues associated with the project – annual resident waste charges, gate fees from commercial wastes or revenue from sale of compost or recovered recyclables. Instead, a zero value was assumed for these items, on the basis that the purpose of the financial assessment was to compare the long-term costs incurred by the Project against the two possible alternatives, using a discounted cashflow approach.

Alternative 1 is for the Proponent to proceed with the separate organics collection system, and build and operate an enclosed composting plant at the Euchareena Road Site. It would also build a new waste transfer station at Ophir Road RRC, by relocating the current MRF. Residual wastes would be bulked up at the new transfer station and transported in B doubles to the Dubbo Council landfill some 150 km away.

Alternative 2, which is considered to be a “do nothing” or base case, is to for the Proponent to construct a waste transfer station at the Ophir Road RRC, to bulk up all wastes (including garden and food organics currently contained in the municipal and commercial waste streams). There would be no separate collection of this material as is currently proposed. All wastes would be compacted as much as possible at the new waste transfer station, and transported to Dubbo in B double trailers.

The results of the assessment show that the Project would have a lower initial capital cost than Alternative 1 (landfilling only residuals at Dubbo) but higher than Alternative 2 (landfilling all wastes at Dubbo). However, when converted to an equivalent annual cost over 40 years, the Project would be cheaper than the two alternatives. There would also be lower annual costs per tonne of waste handled for the Project, compared to the two alternatives.

Financial analysis of the Project vs alternatives (at 7% discount rate)

	Initial capital cost	Total annualised cost	Average cost per tonne handled	Waste landfilled per annum	Total cost over 40 yrs	Net Present Value (cost) ¹
	\$M	\$M/annum	\$	t	\$M	\$M
The Project	14.6	6.7	52.08	29,740 ²	210	-89
Alternative 1 – Residual waste to Dubbo	15.9	9.6	75.28	25,740	342	-125
Alternative 2 – All waste to Dubbo	7.0	8.1	70.44	36,901	312	-125

Note:

¹ Does not include cost of garbage collection services, recycling collection services or MRF operations, nor continuing Ophir Road RRC recycling and special waste disposal operations.

² Includes 4,000 t/yr of VENM used for landfill completion works

As mentioned above, for both Alternatives 1 and 2, there would need to be a new waste transfer station at Ophir Road RRC with a compactor, which would be more expensive than a baling plant located within the existing MRF building, and there would also be a need to purchase a number of dedicated prime movers and B double trailers for hauling waste to Dubbo. The initial capital costs of Alternative 2 are estimated to be the lowest of all the scenarios analysed, since this alternative would have limited infrastructure associated with it (only a new transfer station at Ophir Road RRC).

Alternative 2 would include a larger capacity waste transfer station than Alternative 1 and require more prime movers and B double trailers, due to greater quantities of waste being handled. There would be no separate collection and composting of organics with Alternative 2. All organics would be transported to Dubbo, mixed with other wastes.

In terms of operational costs, the costs associated with establishing and operating a separate food/garden waste collection system and enclosed composting plant (both the Project and Alternative 1) would be higher than transporting all wastes to Dubbo (Alternative 2). However the quantity of waste landfilled for the Project and Alternative 1 would be lower, hence landfill levies payable (on all waste), and CPRS liabilities (on waste likely to generate landfill gas) would also be lower.

Since the Proponent would have no control over landfill charges at Dubbo landfill or any other external landfill site, the long term costs associated with Alternatives 1 and 2 could be much higher than for the Project if gate fees rose due to: (1) increases in the waste levy, (2) operational cost increases, or if a significant allowance was made for CPRS charges by the host council or landfill owner.

The distances and associated transport costs mean that the two Dubbo landfill alternatives would incur significantly higher costs than the Project, over a 40 year period. Even when discount rates and waste levy rates are varied, the Project is more economic than the modelled alternatives.

Agricultural capability of the Euchareena Road Site and the region

The land proposed for the landfill site, buildings associated with composting, screening bunds, vehicle access roads and existing cleared land (67.3 ha) would obviously result in substantial changes to its current land use.

If the whole of the 67.3 ha area was removed from agricultural production, this would represent a very small percentage of the total area for agricultural use in Cabonne LGA (67.3 ha out of 511,436 ha or about 0.01%) and a smaller percentage across the shires of Cabonne and Blayney and Orange City. Within the Cabonne LGA, there is approximately 78,320 ha of crop and fallow land. Therefore as a percentage of crop and fallow land Cabonne LGA, this 67.3 ha represents about 0.1%.

However, it is considered that during construction and operation of the Euchareena Road RRC, part of this 67.3 ha area could be grazed by livestock, as long as fencing was erected to contain stock in suitable locations. Also, during progressive rehabilitation of the landfill site and after closure of the Euchareena Road RRC when its useful life is completed, agricultural production could be resumed. It is likely that livestock grazing on improved pastures would be the best use of the land after site closure as the contours of the final landform would not be conducive to regular cropping.

For Cabonne LGA, there would be a loss of \$8,300 per year, which compares to the total value of agricultural production of about \$160 million per year, or about 0.005% per year. It is unlikely that such a loss would have any significant socio-economic impacts for agriculture in Cabonne and surrounding councils.

The change in land use would not be cumulative. Development of the Euchareena Road RRC would not encourage additional similar developments in the vicinity and add to the decline in prime crop and pasture land. The change in land use for the proposed Euchareena Road RRC is for a single, definable and necessary development. This would not lead to a continuous decline in the area of prime agricultural land and subsequent decrease in the socio-economic outcomes for residents.

In addition, the Proponent is proposing to offer compost produced from the tunnel composting facility to local farmers free of charge (based on assessed 'beneficial program' applications) for the first two years. This initiative would contribute to enhanced agricultural productivity in the surrounding areas.

Comparative sustainability assessment

The environmental sustainability of the Project has been assessed using a Life Cycle Assessment methodology. This approach has enabled the Project to be assessed and benchmarked against a base case option. Environmental impact categories that are common to waste management systems analysis are reported against including:

- ▶ Global warming potential,
- ▶ Solid waste to landfill;
- ▶ Resource use benefits (soil structure and water use); and
- ▶ Air and water pollutant loads (considered for a limited range of transport air toxins and landfill).

The assessment found that the Project delivers a net environmental benefit, over the business-as-usual option, of \$56/t. These benefits would translate to a net annual benefit of \$3.1 million/yr.

The greatest benefits arise from the stabilisation of landfill emissions to air and water as a result of removal of organics from waste. The next most significant benefits would arise from compost application, including soil property benefits such as improved water retention in soil, reduced salinity and soil structure decline, as well as the benefits from products avoided by the use of compost including fertiliser and pesticides.

Mineral resources

The proposed Euchareena Road RRC would not adversely impact on any potential future development centred on the former Copper Hill Mine because of the distance between the Euchareena Road Site and the defined mineralisation. Further, in the event that mineralisation at the Power Anomaly can be economically mined, it is likely that the proposed Euchareena Road RRC and any proposed mining operation could co-exist. Such a coexistence would not impact negatively on the economic benefits arising from the venture on the Molong community.

Scope 1 and 2 greenhouse gas assessment

Considering scope 1 and 2 emissions, the Project is expected to generate 19,265 t CO₂-e of greenhouse gas emissions annually. The total annual NSW emissions for 2007 was 151.6 Mt CO₂-e. Hence, the estimated annual Scope 1 and 2 emissions from the Project would equate to approximately 0.01 % of the state's total emissions.

Implementation of the Project would result in diversion of a significant quantity of waste, including organic waste, from the landfill, which would otherwise have contributed to landfill gas generation.

PROJECT JUSTIFICATION AND CONCLUSIONS

The justification for the Project is based on a number of factors:

- ▶ The Project is consistent with the strategic direction for waste management in the NSW Government (2009) *Draft NSW State Plan* and the Proponent's corporate objectives and strategic drivers;
- ▶ The Project meets a need for alternative waste technologies;
- ▶ The Project would assist in satisfying regional demand for sustainable waste management facilities;
- ▶ The Project would enable councils to reduce waste management costs and access financial incentives for using alternative waste technologies;
- ▶ The sites are suitable for the proposed uses;
- ▶ The Project uses proven technology; and
- ▶ The Project provides opportunities for regional cooperation.

This Environmental Assessment has considered the potential impacts of the Project at the Ophir Road RRC and the proposed Euchareena Road RRC.

The Environmental Assessment has examined a number of key issues surrounding the Project, including identification of potential negative impacts. There are no major environmental issues with this project.

The main potential impacts requiring normal levels of environmental management are:

- ▶ Air quality and odour;
- ▶ Noise;
- ▶ Traffic and transport; and
- ▶ Surface water.

The Environmental Assessment concludes that many of the potential issues identified would be effectively managed through project design features. To manage other issues, and in some cases eliminate them completely, a number of mitigation and management measures (commitments) would be undertaken. The construction and operation of the Project would be undertaken in accordance with all



relevant legislative guidelines. It is recommended that the Project be approved subject to the implementation of the mitigation measures and commitments identified in this Environmental Assessment.



PART A

Introduction and Context

A.1 Introduction

A.1.1 Project Overview

GHD has been engaged by Orange City Council (the Proponent), to prepare documentation to support a project application for the Orange Resource Recovery and Waste Management Project (referred thereafter as 'the Project'). The Proponent is seeking approval of the Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project has been classified as Part 3A under delegation from the Minister of Planning (Appendix A).

The Project forms an integrated plan for improved resource recovery and residual waste management with new operations at two separate sites:

- ▶ The existing Ophir Road Resource Recovery Centre (RRC); and
- ▶ The proposed Euchareena Road Resource Recovery Centre (RRC).

The following new infrastructure, for which project approval is sought, would be provided at each site:

- ▶ Ophir Road RRC – A new materials recovery facility (MRF) building, for the existing or new MRF equipment to service Orange and five other regional councils under the current kerbside recycling arrangements, plus a waste baling operation within the existing MRF building, which would be modified to suit the equipment and permit short term storage of bales undercover;
- ▶ Euchareena Road RRC – A new enclosed tunnel composting plant for separately collected food and garden organics with a biofilter, associated roads, outdoor compost maturation and refining areas, plus a landfill to receive bales of waste from Ophir Road and other regional sources (if required), and unbaled materials deemed unsuitable for baling, associated access roads, a weighbridge, site amenities, and vehicle parking areas.

A.1.2 The Proponent

The Proponent for the project described in this Environmental Assessment is Orange City Council.

The Council (established 1860) is a democratically elected local government body, responsible for providing services to the residential, industrial and commercial community of approximately 40,000 people and to visitors of the city and surrounding areas. The Council provides physical infrastructure as well as environmental, social and cultural services. Furthermore, the Council aims to maintain the natural heritage of the area and strives to attract appropriate value-adding development and investment into the region.

The inset on Figure A.1-1 shows the boundary of the Orange City LGA which covers approximately 298 km² and the surrounding boundary limit of the Cabonne LGA, in which the Euchareena Road RRC is to be located, which covers approximately 6,000 km².

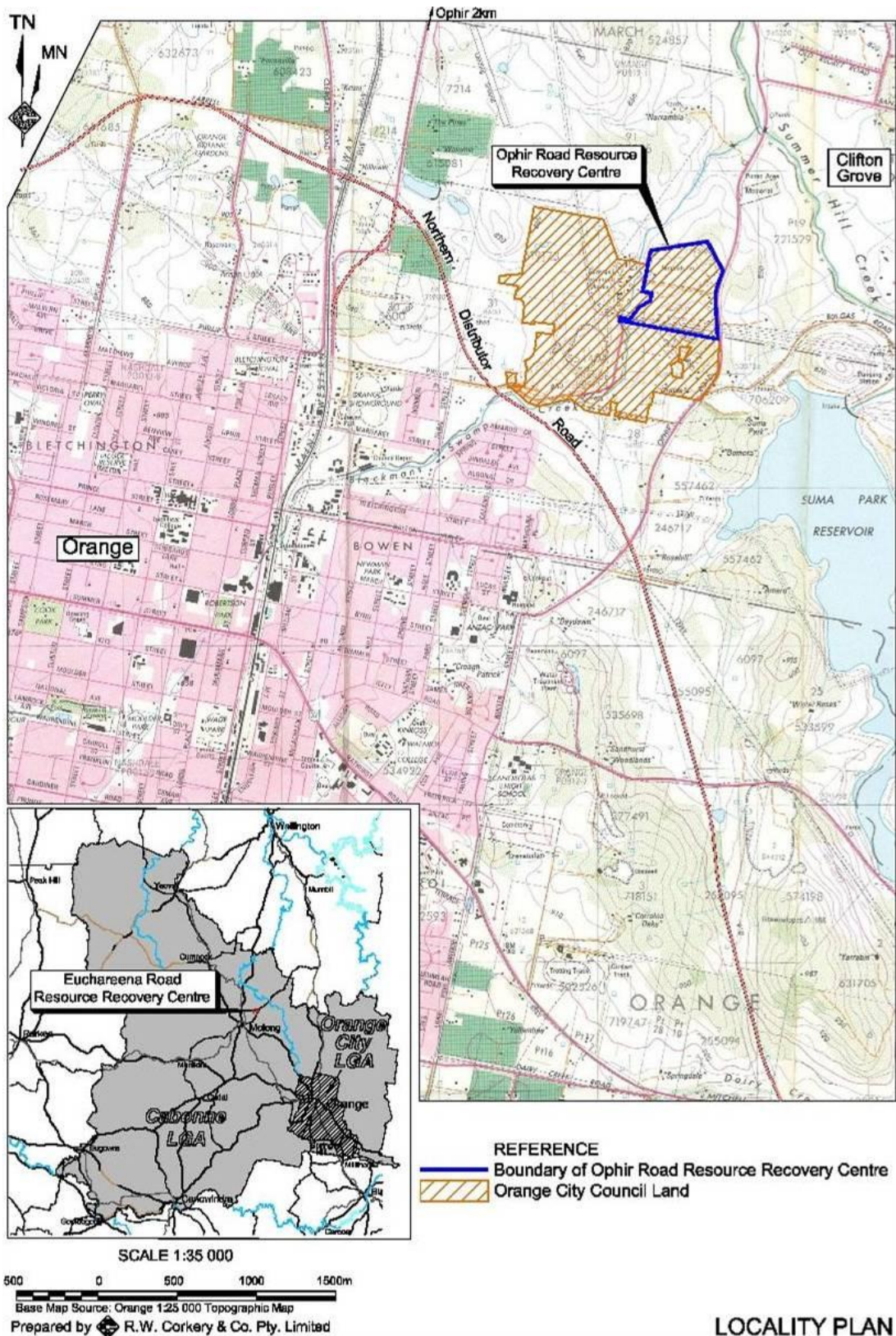


Figure A.1-1 Orange LGA

Orange City and surrounding councils have been involved a rural land study which has implications for regional impacts of Orange as a service centre. Waste also forms part of that impact with some 3,500 (ABS 2006) people travelling from Blayney and Cabonne LGAs daily to work and for the total population to use recreation facilities. One measure of the level of economic activity is the waste generated by the business/government sector (C&I and C&D waste), which amounts to some 35,000 t/year.

Orange City Council owns the land at the Euchareena Road Site. Furthermore, existing and proposed infrastructure at Orange City Council's Ophir Road RRC would be owned and operated by Orange City Council. Both sets of infrastructure are integral to the full scope of the integrated resource recovery and waste management strategy described in this Environmental Assessment (Chapter A.3).

A.1.3 The Need for the Project

There is increasing concern across NSW about the way we, the community, manage our waste – with sub-optimal recycling and heavy reliance on burying waste in landfills. Aside from wasting potential resources, the impact on the global environment has emerged as a serious consideration.

The need for action is underlined by the limited life of the current landfill at the Ophir Road RRC. The remaining operational life of this landfill, the sole landfill in the Orange City LGA, is approximately four years. The Proponent has recognised the need to plan ahead for the introduction of waste processing technologies and landfill capacity for residual wastes to achieve sustainable long term environmental outcomes.

Over the life of the proposed landfill which forms part of this project, areas in the region will see the completion of their landfills. Other regional councils are conscious of the need to accommodate future residual waste and meet current and emerging environmental requirements, and have had discussions with the Proponent about the proposed waste processing and disposal plans contained in this Environmental Assessment.

The Project provides for the acceptance and placement in the Euchareena Road landfill of 450,000 t of waste generated in regional LGAs. This would assist in the eventual closure of un-manned landfills that do not meet current expectations for modern landfilling operations, which are operated by some of the regional councils. The focus of this project is on introducing a better way to manage community and business wastes and to make services available to surrounding regional LGAs

Further details on the need for the Project are provided in Sections A.3 and A.4.

A.1.4 The Part 3A Project Approval Process

Part 3A of the *Environmental Planning and Assessment (EP&A) Act* establishes an assessment and approval regime for development that is declared to be a Part 3A project by either a state environmental planning policy (clause 75B(1)(a)) or ministerial order (clause 75B(1)(b)).

Clause 75B(2) specifies the kinds of development that the Minister may declare to be a project to which Part 3A applies:

'(2) Kinds of projects

The following kind of development may be declared to be a project to which this Part applies:

(a) major infrastructure or other development that, in the opinion of the Minister, is of State or regional environmental planning significance,

(b) major infrastructure or other development that is an activity for which the Proponent is also the determining authority (within the meaning of Part 5) and that, in the opinion of the Proponent, would (but for this Part) require an environmental impact statement to be obtained under that Part.'

On 25 September 2008, the Director-General of Planning as delegate for the Minister for Planning, formed the opinion that the proposed Orange Resource Recovery and Waste Management Project is a major project to which Part 3A of the EP&A Act applies. According to section 75D(1), the Minister for Planning is the approval authority for Part 3A projects. A letter from the Department of Planning is provided in Appendix A) which provides justification for this project to be considered under Part 3A of the EP&A Act.

This Project is a regional initiative located in the Orange City and Cabonne LGAs in central western New South Wales. It involves relocating the current MRF, which is currently utilised by five other Regional Councils for processing kerbside recyclables. The materials rejected from the MRF as unsuitable for recycling and which are to be disposed of at a landfill are currently placed into the Ophir Road landfill. In future, those rejected materials will be placed into a landfill at the Euchareena Road RRC. An available landfill for the receipt of residual wastes is an essential component of an effective recycling facility and the proposed Euchareena Road RRC would assist in the continuation of current recycling arrangements for the LGAs in the region.

The proposed enclosed tunnel composting plant would also be available for use of regional councils who may not otherwise be able to afford to implement such technology, due to their significantly lower waste quantities. Without such affordable AWT technology, these councils may not be able to achieve significant diversions of waste from landfill, and thereby meet their obligations under the NetWaste Strategy and in accordance with NSW Waste *Avoidance and Resource Recovery Strategy* targets. Sending food/garden organics to the composting plant would allow these councils to reduce their greenhouse gas emissions, and also extend the time before they run out of landfill space.

The Project therefore is critical to Orange and the Central West region contributing to the NSW resource recovery targets. The baling plant and baled waste landfill would also be available for other councils, including Cabonne (which was formerly a joint venture partner), to access on a commercial basis. For councils that are predicted to run out of landfill space over the next few years, the Euchareena Road RRC would provide them with a modern facility that would meet NSW Department of Environment, Climate Change and Water (DECCW) requirements and minimise their environmental liabilities.

A.1.5 Contents of the Environmental Assessment

The Environmental Assessment supports an application for project approval for the Project from the Minister for Planning under Part 3A of the EP&A Act. It has been prepared in accordance with the EP&A Act and the Director-General's requirements (included in Appendix B). The Environmental Assessment provides:

- ▶ Information on the Project, including the project need and alternatives considered;
- ▶ An assessment of the potential key environmental impacts of the Project identified by the Director-General's requirements; and
- ▶ The Proponent's commitments in terms of measures to minimise and manage potential environmental impacts.

The Environmental Assessment is structured as follows:

Volume 1 – Environmental Assessment (Main Report)

Volume 1 includes:

- Part A Introduction and Context – provides an introduction to the Environmental Assessment (Section A.1); information on the assessment requirements under relevant legislation and environmental planning instruments (Section A.2); details of the waste strategy that underpins the Project and the current and future waste management statistics (Section A.3); the need for the Project including justifiable demand (Section A.4); a summary of the consultation that occurred during the assessment process and planned consultation (Section A.5); and background and context to the Project and previous issued addressed by the Project (Section A.6).
- Part B Ophir Road Resource Recovery Centre – includes details of existing infrastructure and operations (Section B.1) the description of this component of the Project (Section B.2) and the environmental setting (Section B.3) at the Ophir Road Site. This part also includes an environmental risk analysis identifying key potential environmental issues for the Ophir Road Site (Section B.4) and describes the results of the assessment of key environmental issues identified by the Director-General's requirements and in the environmental risk analysis (Section B.5);
- Part C Euchareena Road Resource Recovery Centre – includes the description of this component of the Project (Section C.1) and the environmental setting (Section C.2) at the Euchareena Road Site. This part also includes an environmental risk analysis identifying key potential environmental issues for the Euchareena Road Site (Section C.3) and describes the results of the assessment of key environmental issues identified by the Director-General's requirements and in the environmental risk analysis (Section C.4);
- Part D The Overall Project – provides a socio-economic assessment of the Project (Section D.1) and a scope 1 and 2 greenhouse gas assessment (Section D.2);
- Part E Alternatives Considered – provides details of the alternatives to the Project including alternative sites (Section E.1), consolidation of waste operations in Orange (Section E.2), alternative regional landfills (Section E.3) and other alternatives routes considered (Section E.4);
- PART F Draft Statement of Commitments – for the Project described, and considering the results of the assessment, this part provides a statement of commitments made by the Proponent in relation to mitigation, management and monitoring of potential environmental impacts (Section F.1);
- Part G Justifications and Conclusions – this part provides an evaluation of the Project with regard to social, economic and environmental considerations, and the project justification and conclusion to the Environmental Assessment (Sections G.1 to G.3);
- Part H References; and
- Part I Glossary of Technical Terms, Acronyms and Symbols.

Volumes 2 to 4 – Appendices

Volumes 2 to 4 contain the specialist technical/background reports prepared as part of the Environmental Assessment process, supporting planning correspondence and statutory and community consultation information:

Volume 2:

- ▶ Appendix A – Department of Planning Opinion that Part 3A Applies to the Project
- ▶ Appendix B – Director-General's requirements
- ▶ Appendix C – Statutory and Community Consultation
- ▶ Appendix D – Site Selection Study
- ▶ Appendix E – Existing Ophir Road RRC Environment Protection Licence
- ▶ Appendix F – Air Quality Assessment Report – Ophir Road RRC
- ▶ Appendix G – Traffic and Transport Assessment Report – Ophir Road RRC

Volume 3:

- ▶ Appendix H – Noise Assessment Report – Ophir Road RRC
- ▶ Appendix I – Soils, Capability & Agricultural Assessment Report
- ▶ Appendix J – Surface Water Assessment Report – Euchareena Road RRC
- ▶ Appendix K – Groundwater Assessment Report – Euchareena Road RRC
- ▶ Appendix L – Flora Assessment Report – Euchareena Road RRC
- ▶ Appendix M – Fauna Assessment Report – Euchareena Road RRC

Volume 4:

- ▶ Appendix N – Aboriginal Heritage Assessment Report – Euchareena Road RRC
- ▶ Appendix O – Air Quality Assessment Report – Euchareena Road RRC
- ▶ Appendix P – Traffic and Transport Assessment Report – Euchareena Road RRC
- ▶ Appendix Q – Noise Assessment Report – Euchareena Road RRC
- ▶ Appendix R – Sustainability Assessment Report
- ▶ Appendix S – Greenhouse Gas Assessment Report
- ▶ Appendix T – Risk Analysis for Transmission of American Foul Brood Disease
- ▶ Appendix U – Robert Gulliford Report
- ▶ Appendix V – Financial Assessment Report

A.1.6 The Project Team

The project team for preparation of this Environmental Assessment included:

Table A.1-1 Project Team

Organisation	Co-ordinator / Main
GHD	David Gamble (Project Director), Anna Montgomery (Project Manager), Stuart Dever, Monique Roser, Luis Rodriguez, Geoff Metcalfe, Sally Manahan, Mick Lyons, Leanne Philpott, Joe Lane
Orange City Council	Stephen Sykes, Wayne Davis, Kylie Tomlinson
RW Corkery & Co	Rob Corkery
Wright Corporate Strategy	Tony Wright
Geolyse	Martin Haege
Heggies	Ronan Kellaghan, Mark Blake, Clemence Terraz
Evans & Peck	Steve Perrens
OzArk Environmental & Heritage Management	Phillip Cameron, Jodie Benton
Geoff Cunningham Natural Resource Consultants	Geoff Cunningham
Emphron Informatics	Mervyn Thomas
Aquaterra Consulting	Peter Dundon, Anthony Dixon
Other specialists	Robert Gulliford, Bob Amaral

A.2 The Statutory Framework

A.2.1 Overview

The following section provides an overview of relevant legislation, policies including Commonwealth, NSW State and local planning instruments.

A.2.2 Commonwealth Legislation and Policies

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) prescribes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected areas and species, populations and communities and heritage items.

The approval of the Commonwealth is required for:

- ▶ An action which has, will have or is likely to have a significant impact on 'matters of national environmental significance';
- ▶ An action by the Commonwealth or a Commonwealth agency which has, will have or is likely to have a significant impact on the environment;
- ▶ An action on Commonwealth land which has, will have or is likely to have a significant impact on the environment; or
- ▶ An action which has, will have or is likely to have a significant impact on the environment on Commonwealth land, no matter where it is to be carried out.

Matters of National Environmental Significance

Matters of national environmental significance are considered below:

- ▶ Listed threatened species and communities;
- ▶ Listed migratory species;
- ▶ Ramsar wetlands of international importance;
- ▶ The Commonwealth marine environment;
- ▶ World Heritage properties;
- ▶ National Heritage places; and
- ▶ Nuclear actions.

Approval under the EPBC Act was required for the previous proposal for the Euchareena Road Site, as it was declared to be a 'controlled action' (EPBC Reference 2002/783) on 25 September 2002 based on Sections 18 and 18A (listed threatened species and communities, i.e. Grassy White Box Woodlands) and Sections 20 and 20A (listed migratory species) of the Act. The previous assessment was based on the incorrect premise that it may have been necessary to remove the bulk of the White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland Community on site. The previous proposal did not involve any substantial clearing of this community on the Euchareena Road Site. The current project does not require this either. Only a few isolated paddock trees would be removed.

However, as a precautionary measure, a new Referral in accordance with the EPBC Act (EPBC 2009/502) was submitted to the Commonwealth in July 2009 to determine whether the new project will be declared to be a Controlled Action.

A.2.3 NSW State Legislation and Policies

NSW State Legislation

NSW legislation relevant to the Project (in terms of approvals / licences required) and the preparation of the Environmental Assessment are listed in Table A.2-1. A summary of the relevance of each Act and any additional approvals/licences required is provided.

Table A.2-1 Relevant NSW legislation

Act	Comment	Approvals/licences required
<i>Protection of the Environment Operations Act 1997</i>	Activities required to obtain a licence under the Act are detailed in Schedule 1. The Project satisfies the definitions under clause 39 (waste disposal (application to land)), clause 41 (waste processing (non-thermal treatment)) and clause 42 (waste storage).	A new environment protection licence would be required for the Euchareena Road Site and a modified environment protection licence would be sought for the Ophir Road RRC.
<i>Waste Avoidance and Resource Recovery Act,</i>	Implemented to achieve environmentally sound management of waste, waste avoidance and resource recovery in NSW. It aims to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of Ecologically Sustainable Development. The Project is consistent with the WARR Act, which aims to make better use of resources and minimise waste disposal.	
<i>Environmental Planning and Assessment Act 1979</i>	The principal statutory NSW State Government act that covers environmental planning and assessment. On 25 September 2008, the NSW Director-General of Planning as delegate for the NSW Minister for Planning, formed the opinion that the proposed Resource Recovery and Waste Management Project is a major project to which Part 3A of the EP&A Act applies.	The NSW Minister for Planning is the consent authority for the Project. The NSW Minister for Planning will make a determination on the Project.

Act	Comment	Approvals/licences required
<i>National Parks and Wildlife Act 1974</i>	Provides the basis for the establishment, preservation and management of national parks, historic sites and certain other areas, and the protection of certain fauna, native plants and Aboriginal relics. Aboriginal heritage issues are considered in sections B.5.4 and C.4.7.	None. A permit under section 87 or a consent under section 90 is not required for Part 3A projects.
<i>Heritage Act 1977</i>	Provides for the protection and conservation of non-Aboriginal cultural heritage, including scheduled heritage items, sites and relics. Cultural heritage issues are considered in section C.4.8.	None. An approval under Part 4, or an excavation permit under section 139 is not required for Part 3A projects.
<i>Threatened Species Conservation Act 1995</i>	The potential impact of the Project on matters covered by this Act have been considered by the flora and fauna assessment that has been undertaken as part of this Environmental Assessment (refer sections B.5.3, C.4.4 and C.4.5.	None.
<i>Roads Act 1993</i>	Consent is required under this Act for various activities affecting public and classified roads. The Project would involve road upgrading works and the construction of an intersection at the site entrance from Euchareena Road and works to upgrade an intersection on the Mitchell Highway.	An approval is required under Section 138 to undertake works involving a public road.

A.2.4 State Environment Planning Policies

The following State environmental planning policies are relevant to the Project and have been considered within the Environmental Assessment.

- ▶ State Environmental Planning Policy No. 33 – Hazardous and Offensive Development;
- ▶ State Environmental Planning Policy No. 44 – Koala Habitat Protection;
- ▶ State Environmental Planning Policy No. 55 – Remediation of Land;
- ▶ State Environmental Planning Policy (Major Development) 2005; and
- ▶ State Environmental Planning Policy (Infrastructure) 2007.

Table A.2-2 Relevant SEPPs

SEPP	Summary	Relevance to Project
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development	Aims to ensure that appropriate measures are employed to minimise the impacts of developments that are deemed to be either 'hazardous' or 'offensive'.	Under SEPP 33, the Project is considered to be potentially offensive because waste related activities could potentially impact on the surrounding localities, even after measures are taken to reduce or minimise the potential impacts. However, the Project is not considered hazardous, as environmental controls proposed for the Project would limit the potential health risk to workers and nearby residents and risk to the biophysical environment. Mitigation measures for these risks are outlined in the various sections of this Environmental Assessment. SEPP 33 requires that potentially hazardous or offensive developments are publicly advertised under the same requirements as for designated developments. Community consultation has been carried out as per these requirements and in accordance with the EP&A Act.
State Environmental Planning Policy No. 44 – Koala Habitat Protection	Aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over the present range and reverse the current trend of koala population decline.	Part 2 of SEPP 44 sets out the steps that must be followed by a consent authority when considering a development application on land with an area of more than 1 ha. The Project has been considered and assessed in accordance with SEPP 44 (see section C.4.5.7)
State Environmental Planning Policy No. 55 – Remediation of Land	Aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.	The SEPP applies to the whole of the State. Clause 7 of SEPP 55 requires contamination and remediation of land to be considered by a Consent Authority in determining a development application. Based on the available information, the proposal is not affected by land contamination.
State Environmental Planning Policy (Major Development) 2005	The Major Projects SEPP defines certain developments that are major projects under Part 3A of the EP&A Act and determined by the Minister for Planning. The SEPP also lists State Significant Sites.	The Project is considered to fall within Clause 27(1)(b), as it involves construction of a regional putrescible landfill that has a capacity to receive more than 650,000 t of putrescible waste over the life of the landfill.

SEPP	Summary	Relevance to Project
State Environmental Planning Policy (Infrastructure) 2007	Introduced to facilitate the delivery of infrastructure across NSW by improving regulatory certainty and efficiency. It includes specific planning provisions and development controls for 25 types (sectors) of infrastructure.	Division 23 of the Infrastructure SEPP applies to the Project. In determining the Project, the Consent Authority (Department of Planning) must take into account a number of matters including: - Whether justifiable demand exists for the landfill, having regard to the provisions of the NSW WARR Strategy and the waste disposal data provided by DECCW (refer section A.3.10); - Whether the location is consistent with any regional planning strategies or locational principles included in <i>EIS Guideline: Landfilling</i> (Department of Planning, 1996); and - The views of relevant public authorities and councils responsible for the area from which the waste material is proposed to be sourced.

A.2.5 Regional Environmental Planning Policies

There are no statutory regional plans that relate to the Project, however, the NetWaste *Regional Resource Management Plan* (RRMP), which has been adopted by the Proponent, incorporates a range of objectives and actions that are directly linked to the Project described in this document.

The RRMP outlines the following five programs together with a range of associated actions, a number of which are directly related to the Orange City and surrounding Local Government Areas:

- Regional Profile and Waste Characterisation;
- Council Services;
- Waste Management and Infrastructure;
- Litter Management; and
- Education.

A major focus of the actions outlined within the RRMP is the promotion of local councils working collaboratively on both a subregional and regional level as highlighted by the success of existing collaborative efforts between Blayney, Cabonne, Forbes, Orange and Parkes Councils to establish a 10 year contract for collection of municipal solid waste and recyclables, with an option for kerbside food/garden organics collection.

A full copy of the RRMP is provided on the NetWaste website (www.netwaste.org.au).

A.2.6 Local Environmental Planning Instruments

The Orange City Local Environmental Plan 2006 (the Orange LEP) applies to the Ophir Road RRC, and the Cabonne Local Environmental Plan 1991 (the Cabonne LEP) applies to the Euchareena Road RRC.

Application of the LEPs to the Project is considered below.

Orange Local Environmental Plan 2006

Site zoning and permissibility

The Ophir Road RCC site is zoned 5 (a) Public Purposes. The objectives and development consent provisions of the zone as stated by clause 60 of the Orange LEP are as follows.

'60 General controls for Zone 5 (a) (Public Purposes Zone)

(1) Zone objectives

The objectives of Zone 5 (a) are to identify land used or required to be used for a public purpose, including uses undertaken by, on behalf of, or under the authority of a public authority, and to identify land which is used for a purpose which has specific land use requirements not otherwise provided for in adjoining zones.

(2) In Zone 5 (a), the following:

(a) is allowed without consent:

Development for the purpose of:

agriculture

Exempt development,

Use of a building lawfully erected for, or ancillary to, the particular land use specified on the map.

(b) is allowed only with consent:

Subdivision

Development for the purpose of:

advertisements associated with the use of the land

car parks

communication facilities

dams

land shaping

public buildings

recreation areas

roads

the particular land use specified on the map

utility installations'

As the Project is consistent with the particular use specified on the map (waste management), it would be permissible with consent.

Other relevant clauses

The zoning map indicates that the Ophir Road RRC site falls within 'land subject to special clause provisions', and that the land is a 'control area for development in the vicinity of major industry and utility installations'. Clause 14 of the LEP (included below) includes a number of issues that must be considered when assessing a development application for land within this area.

14 Development in the vicinity of major industry and utility installations

Before determining an application for consent to development in or within the area shown on the map by red hatching, the consent authority must consider the suitability of the development in relation to:

(a) the prospective effects of odour, noise, dust, fumes and visibility from any offensive industries, utility installations, waste disposal areas or extractive industries in the vicinity, and

(b) the effectiveness of all measures employed and proposed to be employed according to the best available technology (not entailing excessive cost) to reduce or minimise the impact of offensive industries, utility installations, waste disposal areas or extractive industries in the vicinity.

As a result of this clause, the consent authority is required to consider the following in relation to the Project:

- ▶ Air quality and odour impacts;
- ▶ Visual impacts; and
- ▶ The effectiveness of the mitigation measures proposed to minimise the impact of the Project.

These issues are considered in sections B.5.6 and B.5.9 of this Environmental Assessment.

Cabonne Local Environmental Plan 1991

Site zoning and permissibility

The Euchareena Road RRC site is zoned General Rural 1 (a). The objectives of the zone as stated by the LEP are as follows:

'The objective of this zone is to promote the proper management and utilisation of resources by:

(a) protecting, enhancing and conserving:

- (i) agricultural land in a manner which sustains its efficient and effective agricultural production potential,*
- (ii) soil stability by controlling and locating development in accordance with soil capability,*
- (iii) forests of existing and potential commercial value for timber production,*
- (iv) valuable deposits of minerals, coal, petroleum and extractive materials by controlling the location of development for other purposes in order to ensure the efficient extraction of those deposits,*
- (v) trees and other vegetation in environmentally sensitive areas where the conservation of the vegetation is significant to scenic amenity or natural wildlife habitat or is likely to control land degradation,*
- (vi) water resources for use in the public interest,*
- (vii) areas of significance for nature conservation, including areas with rare plants, wetlands and significant habitat, and*
- (viii) places and buildings of archaeological or heritage significance, including the protection of Aboriginal relics and places,*

(b) preventing the unjustified development of prime crop and pasture land for purposes other than agriculture,

(c) ensuring that any allotment created for intensive agricultural purposes is potentially and physically capable, on its own, of sustaining a range of such purposes or other agricultural purposes as a commercial agricultural operation suitable to the locality,

(d) facilitating farm adjustments,

(e) minimising the cost to the community of:

- (i) fragmented and isolated development of rural land, and*
- (ii) providing, extending and maintaining public amenities and services,*

(f) providing land for future urban development, for rural residential development and for development for other non-agricultural purposes, in accordance with the need for that development,

(g) providing for a range of rural living styles in appropriate locations within the area to which this plan applies, and

(h) encouraging the establishment of rural and related industries within the area to which this plan applies.'

The development consent provisions for zone 1(a) are provided below.

'2 Without development consent

Agriculture (other than dwellings and intensive livestock keeping); forestry (other than ancillary dwellings and plantation forests).

3 Only with development consent

Any purpose other than a purpose included in item 2 or 4.

4 Prohibited

Motor showrooms; residential flat buildings; shops (other than general stores, wineries or craft shops).'

As the Project is not a purpose included in item 2 or 4, it is permissible with consent.

Other relevant clauses

Clause 10 of the LEP (reproduced below) includes a number of issues that must be considered when assessing a development application for land within zone 1(a). The clause also includes a requirement that consent shall not be granted unless Council is satisfied that the provisions of clause 10 are met. However, with a Part 3A Application, where a development application is considered by the Minister for Planning, rather than Council, it is understood that the Minister shall take account of Clause 10. The Minister makes the determination in respect of Clause 10.

The Director-General Requirements for the Project issued by the Minister require a comprehensive assessment of the economic and social impacts of the Project, paying particular attention to the agricultural capability of the site and region.

'10 General considerations for development within rural zones

(1) The Council shall not consent to an application to carry out development on land within Zone No 1 (a), 1 (c) or 7 (c) unless it has made an assessment, where relevant, of the effect of the carrying out of that development on:

- (a) the present and potential use of the land for the purposes of agriculture,*
- (b) vegetation, timber production, land capability (including soil resources and soil stability), water resources (including the quality and stability of water courses and ground water storage and riparian rights),*
- (c) the future recovery of known or prospective areas of valuable deposits of minerals, coal, petroleum, sand gravel or other extractive materials,*
- (d) the protection of areas of significance for nature conservation or of high scenic or recreational value, and places and buildings of archaeological or heritage significance, including aboriginal relics and places,*
- (e) the cost of providing, extending and maintaining public amenities and services to the development, and*
- (f) future expansion of settlements in the vicinity,*

and the Council is satisfied that the development will not have an adverse effect on the long term use, for sustained agricultural production, of any prime crop and pasture land.

(2) In assessing the effect referred to in subclause (1), the Council shall have regard not only to the land the subject of the application but also to land in the vicinity.'

Section D.1.3 addresses both land capability and agricultural stability, which are relevant to the issues listed in the clause above in the context of the Project, and takes adjoining land into account.

A.2.7 Plans and Strategies

- ▶ NSW Waste Strategy 2003;
- ▶ RENEW strategy;
- ▶ NetWaste Regional Resource Management Plan 2008;

- ▶ Bathurst Orange Dubbo Environmental Sustainability Action Plan; and
- ▶ Orange Management Plan.

Table A.2-3 Relevant plans and strategies

Plan / Strategy	Summary	Relevance to Project
NSW Waste Avoidance and Resource Recovery Strategy (WARRS) 2007	Provides the framework for maximising conservation of natural resources and minimising environmental harm from waste management and disposal of solid waste. Includes targets in four key result areas: Preventing and avoiding waste, increasing recovery and use of secondary materials, reducing toxicity in products and materials, and reduction litter and illegal dumping. Sets 2014 targets for increases in recycling of municipal waste from baseline 26% to 66% in 2014, from 28% to 63% for commercial & industrial waste and from 65% to 76% for construction and demolition waste.	The Project is consistent with the WARRS 2007 in that it delivers improved resource recovery outcomes. Section A.3 describes the improvements in recycling / resource recovery that would be delivered by the Project.
RENEW NSW Strategic Plan 2009-2012	RENEW NSW represents the collective forum of eight voluntary regional waste groups. The strategic plan includes six goals/objectives which includes: ▶ Support of regional groups in the delivery of environmental sustainability, centred on resource recovery and waste management and broader sustainability issues; Supports regional groups to deliver the goals of the WARRS.	The Project is aligned with the goals and objectives of the RENEW NSW Strategic Plan in that it delivers environmentally sustainable resource recovery and waste management solutions for the Central West region and assists the Proponent in delivering the goals of the WARRS.
NetWaste Regional Resource Management Plan 2008	Outlines strategies developed to improve the delivery and planning of waste management services across the entire NetWaste region.	The plans include actions relating to the need to rationalise the 117 Council-operated landfills in the NetWaste region in order to maximise protection of the environment and minimise long-term risks and liabilities. It also notes the need to replace the Orange Ophir Road landfill as it nears completion.

Plan / Strategy	Summary	Relevance to Project
Bathurst Orange Dubbo Environmental Sustainability Action Plan	Describes the need for effective consistent action in relation to sustainability and climate change '...ensuring that our actions work to minimise global warming'. The plan also states that 'a philosophy of 'avoid, re-use, recycle' will inform our approach to waste management, disposal and landfilling will always be a last resort'.	The Project embraces sustainability principles and climate change imperatives in the way waste is managed and potential resources recovered for beneficial use. The Project includes increased resource recovery through improved recycling and construction and operation of a food/garden organics composting facility.
Orange Management Plan 2009-2012	The Management Plan 2009-2012 sets out principal activities and partnerships to be established /implemented to realise the long-term strategic vision of the Orange 2020 community vision.	The Management Plan provides for development of a 'Regional Resource Reprocessing Facility in the initial site set-up of the Euchareena Road Waste Management Facility'.

A.3 Waste Management Strategy

A.3.1 Overview

This section describes the Orange City *Resource Recovery and Waste Management Strategy* that underpins the Project proposed in this Environmental Assessment. Current resource recovery activities and regional partnerships are outlined, as are proposed future regional cooperation objectives. The section also covers drivers for improved waste management and discussion of the *Solid Waste and Resource Management Policy* that set the framework for the Orange City Council *Resource Recovery and Waste Management Strategy*. The Strategy responds to important internal and external drivers for action as well as the stark reality that the available capacity at the Ophir Road landfill is likely to be consumed within four years.

A.3.2 Current Resource Recovery Activities

The Proponent currently operates a domestic waste collection service and kerbside recyclables collection service covering Orange City, Spring Hill and Lucknow. The Ophir Road RRC receives recyclables for sorting, not only from Orange, but from five surrounding LGAs. Self-hauled garden waste is also received, processed and sold as a mulched product. The landfill on site provides for disposal of municipal, commercial and industrial (C&I), and construction and demolition (C&D) waste. An active recovered resource shop at the Ophir Road RRC sells used and salvaged products and materials, usually delivered to the shop for recycling.

Recent waste and resource recovery activities have resulted in resource recovery and recycling levels of around 18% - 20% overall, and include the following activities:

- ▶ **Recyclables:** A fortnightly kerbside collection service is provided, and drop-off facilities are available at the Ophir Road RRC. The Ophir Road RRC is the regional centre for recycling and also processes recyclable paper and containers from Cabonne, Forbes, Parkes, Blayney and Bathurst. This amounts to some 30,000 households across the region, excluding Orange at around 15,000 households, making a total of 45,000 regional households serviced by the Ophir Road RRC Materials Recovery Facility (MRF).
- ▶ **Garden waste:** More than 4,500 t/yr of self-hauled garden waste is diverted from landfill and mulched and sold to the public or used by the Proponent.
- ▶ **Scrap steel, furniture, white goods, etc:** Recyclable goods and materials are **sold** at the Recovery Shop within the Ophir Road RRC.
- ▶ **DrumMUSTER:** Drop-off points are located at the Ophir Road RRC and in various surrounding towns.
- ▶ **Household chemical collection:** Collection programs are conducted from specified drop-off points.
- ▶ **Used oil collection:** Drop-off points are located at the Ophir Road RRC and surrounding towns.
- ▶ **E-waste:** A co-ordinated annual pick up campaign is in place.

A.3.3 Current Regional Partnerships

The Proponent is the host council of NetWaste, the Central and Western Regions collaborative waste management group which comprises 28 local councils, covering a total area of 412,308 square kilometres. NetWaste is funded by DECCW and regarded as one of NSW's leading regional waste groups.

As part of its commitment to regional cooperation, the Proponent has long provided waste disposal and resource recovery services for surrounding regional councils.

- ▶ Five LGAs currently take advantage of the MRF at the Ophir Road RRC for sorting of kerbside collected recyclables (Cabonne, Forbes, Parkes, Blayney, and Bathurst). Processing residuals of around 3,200 t/yr are currently sent to the landfill at the Ophir Road RRC and would in future be transferred to the landfill at the Euchareena Road RRC for disposal.
- ▶ The regional waste collection contract also provides for kerbside collection of food/garden organics which may be triggered by each council if the opportunity to treat such waste is available.
- ▶ Waste for direct disposal to landfill is routinely received at the Ophir Road RRC from other regional areas. Cabonne Council is an important client, with a waste disposal service provided for rural subdivisions in Cabonne northeast of Orange. Waste is also received from other regional councils and commercial waste contractors, including Bathurst and Blayney, from which waste is received on special contract. This amounts to around 1,500 t/yr.

It is proposed that existing regional service arrangements will continue and be further developed at both the Ophir Road RRC and the proposed Euchareena Road RRC. Proposed arrangements are described below.

A.3.4 Regional Cooperation Objectives

The judgement of the NSW Land and Environment Court expressed concerns for apiary sustainability in the NetWaste region (which covers 28 LGAs). The issues raised underline the importance of the opportunity for the proposed Euchareena Road RRC to accept waste from nearby LGAs. There are presently 117 council-operated landfills in the NetWaste region. Only 13 of these landfills are licensed by the NSW EPA, leaving 104 that are operated without formal environmental regulation – as 'tips' rather than landfills designed, constructed and operated to control pollution. No fewer than 58 landfills in the region are operated as unsupervised open tips although some councils are progressing towards restricting access hours to these tips.

It is clear that the apiary threat anticipated by the Land and Environment Court extends to all landfill sites within reach of apiary activities throughout the NetWaste region and elsewhere throughout Australia. Moreover, while there is no evidence of habitual access to well-managed landfills by bees, many landfills across NSW could be potential targets to bees seeking honey/sugar products, nectar or propolis.

The integrated facilities at the Ophir Road RRC and Euchareena Road RRC are ideally positioned to be the regional centrepiece for waste and resource recovery services for all councils in the Central West sub-region and an important destination for regional commercial organic waste. The project components and facility locations have been designed to facilitate access to the AWT to encourage positive regional environmental outcomes, both in waste diversion and distribution of products.

It is proposed to offer defined access to the proposed food/garden organics processing service to other councils in much the same way as five regional councils currently send kerbside collected recyclables to

the Ophir Road MRF for sorting and sale for reprocessing. This will assist regional councils to achieve the State waste diversion targets and the Draft *NSW State Plan* greenhouse gas reduction targets, particularly those councils that do not have the critical mass of organic wastes to support cost-effective waste processing. Informal discussions with a number of regional councils have indicated that the regional food/garden organics processing service will be attractive and of considerable value to those councils.

It is also proposed to receive a defined amount of baled mixed residual waste from other LGAs at the Euchareena Road RRC. The Proponent has held informal discussions with a number of regional councils to gauge their interest in sending mixed residual waste (baled) to this landfill for disposal. With food/garden organics processed at the Euchareena Road RRC, these smaller councils could either close their non-licensed landfills or restrict the putrescible waste delivered to their existing facilities by either sending mixed residual waste to the Ophir Road RRC for baling, or baling the waste in their own LGAs and transferring it to the Euchareena Road RRC for disposal. Although the compaction density of bales produced with mobile equipment may be slightly lower than the compaction rate gained with the fixed equipment at Ophir Road RRC, ultimate capacity consumed at the Euchareena Road landfill should be comparable for both types of logistics systems.

It is further proposed to offer regional commercial waste contractors a defined level of opportunity to deliver commercial, non-putrescible waste to the landfill at the Euchareena Road RRC and commercial food waste to the composting facility at the Euchareena Road RRC. This policy would allow wider communities to make a positive environmental contribution and extend the lives of existing landfill sites.

The extent of regional access will be governed by a preference for regional council take-up of available capacity, within the constraints of the facility size and the consent conditions attached to the project approval.

Transfer facilities would be provided at the Ophir Road RRC for residual waste for bulk transfer to the Euchareena Road RRC. The existing waste transfer station at the Ophir Road RRC, which is used by local residents and businesses, would continue to operate essentially in line with current practice.

A.3.5 Current Waste Management Statistics

The Proponent operates a domestic waste collection service and a kerbside recyclables collection service. The Ophir Road RRC receives recyclables for sorting, and self-hauled garden waste, which is processed and sold. The on-site landfill provides for disposal of municipal, C&I, and C&D waste.

Recent waste and recycling statistics for Orange City only are set out in Table A.3-1. The information in this table is based on recent waste audits which supplement some 12 years of weighbridge data. Although the waste audit data was not available as input to previous assessments, no significant difference has been seen in the results. It should be noted that the most recent waste quantity data available for a full year is from 2007/8.

Table A.3-1 Orange City waste and net resource recovery position (2007/08)

	Municipal (t)	C&I (t)	C&D (t)	Total (t)
Waste Generated	30,250	20,467	14,854	65,571
Total Waste Diverted for Recycling	10,997 (36%)	1,346 (7%)	807 (5%)	13,150 (20%)
Dry materials recycling ¹	2,503	0	0	2,503
Recovered materials – self hauled small loads	197	125	57	379
Community recycling	100	0	0	100
Garden waste	4,547	471	0	5,018
Biosolids recovery	3,650		0	3,650
VENM recovery ²	0	750	750	1,500
Waste Disposal to Landfill	19,253	19,121	14,047	52,421

Source: Orange City Council.

Notes:

1. Kerbside recycling only, net of contamination and wastage in MRF processing.
2. VENM used for landfill cell capping and remediation is included as designated recycling; VENM used for daily cover and landfill road construction is not regarded as nor counted as recycling.

The current gross waste flows and recycling amounts for the Ophir Road RRC are shown in Figure A.3-1. This figure includes contributions from surrounding LGAs from kerbside recycling and associated residuals disposal to the Ophir Road landfill. Figure A.3-1 incorporates both gross input flows and net yield flows post-processing.

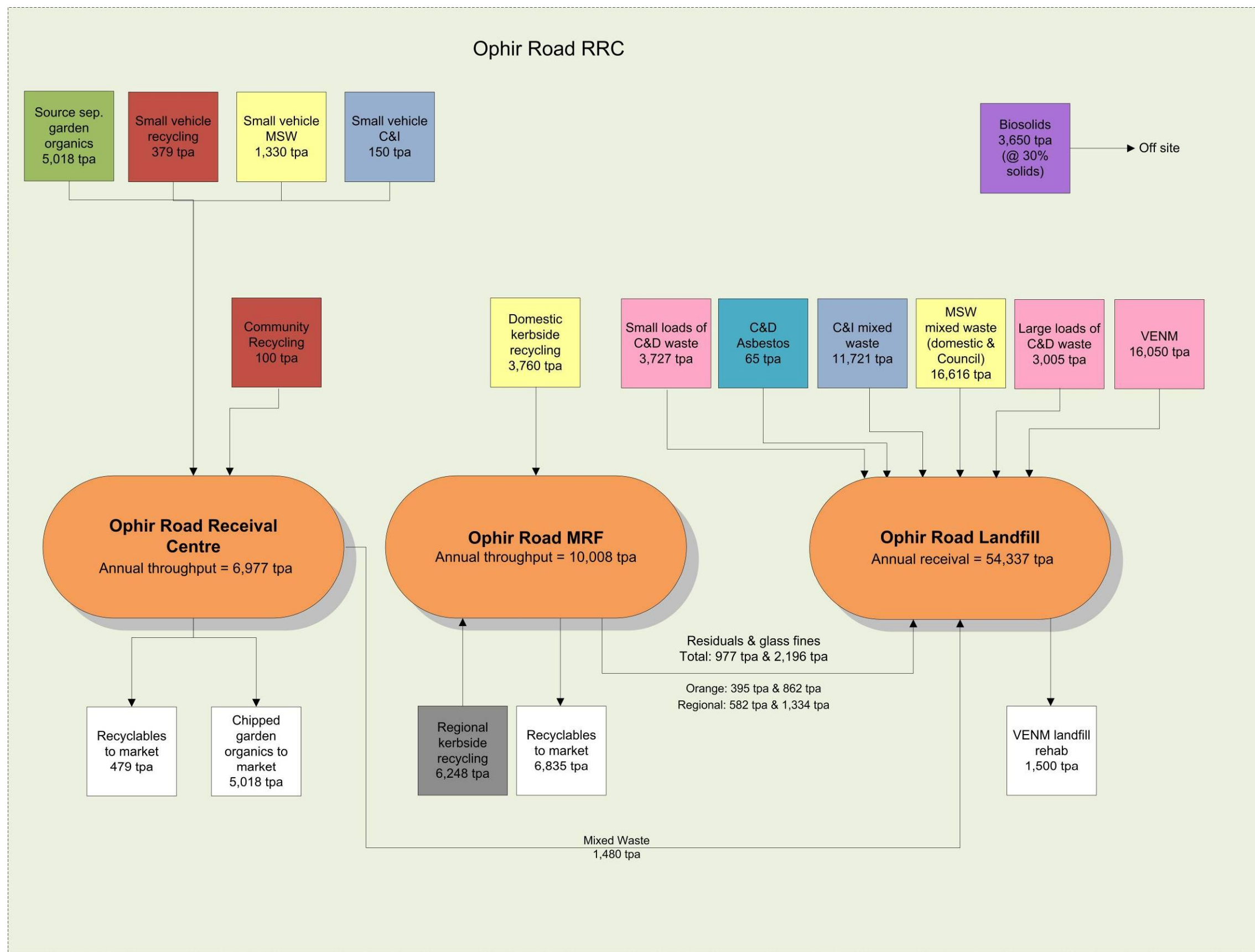


Figure A.3-1 Current waste flows – including regional recycling processed at Orange

A.3.6 Drivers for Improved Waste Management and Action

A.3.6.1 Internal drivers

The Proponent recognises the increasing level of awareness throughout the Orange community and business sector about the state of the environment and the potential effects of climate change. The Proponent also recognises its leadership role for environmental stewardship and its responsibilities in managing the impacts of its own activities undertaken on behalf of the community.

The *Bathurst, Orange, Dubbo (BOD) Environmental Sustainability Action Plan*, for instance, clearly states the importance of action to conserve biodiversity and the need for:

'...effective consistent action in relation to sustainability and climate change...ensuring that our actions work to minimise global warming'.

The Orange City *Resource Recovery and Waste Management Strategy* ('the Strategy' as described in the following section) embraces sustainability principles and climate change imperatives in the way waste is managed and potential resources recovered for beneficial uses. Action to conserve biodiversity is taken in managing property and land during waste management and resource recovery activities.

The *BOD Environmental Sustainability Action Plan* also states that:

'A philosophy of 'avoid, re-use, recycle' will inform our approach to waste management, disposal and landfilling will always be a last resort'.

The Proponent's *Management Plan 2009-2012* recognises these important principles and provides for development of a:

'...Regional Resource Reprocessing Facility in the initial site set-up of the Euchareena Road Waste Management Facility'.

and:

'Enhanced resource recovery from the commercial sector thereby contributing to Council's overall waste diversion target of 55% by 2012.'

These principles and broad plans support the high level of importance accorded by the Orange community to waste management and resource recovery. A recent community survey for Orange City Council² reported a 91% Agreement to the proposition: *'I recycle whenever I can'* and 93% agreement that *'every household should recycle'*. The survey also reported Very High satisfaction with Orange City Council's Ophir Road Resource Recovery Centre.

The principles and plans have provided a clear underpinning and important guidance for the development of the Strategy.

A.3.6.2 External drivers

Aside from the essentially internal drivers for the Proponent to take more action on waste, improved resource recovery is of vital importance to the New South Wales Government. The *NSW Waste Avoidance and Resource Recovery Strategy* sets out the agenda for waste management reform and

² Auspoll Research Consulting. *Community Satisfaction measurement & Community Attitudes Survey*. June 2009.

provides targets for improved resource recovery. All LGAs in NSW are working toward the resource recovery targets which have a 2014 delivery date.

Resource recovery and recycling in the main NSW centres has for some years been propelled by the NSW *Waste and Environment Levy*. The Sydney Metropolitan Area levy has moved to \$58/t in 2009/10 and will increase to around \$120/t by 2015/16. The levy has recently been extended from its application to the Sydney Metropolitan Area and the Extended Regional Area (Newcastle, Wollongong and the Central Coast). It will now include a new regional zone, the Regional Regulated Area, which includes the NSW coast and the Blue Mountains. Although no indication has been given by the NSW Government that the levy may be further extended, the possibility of extension to the Central West must be anticipated in longer term planning.

The Proponent has for many years promoted a collaborative approach between regional councils to better manage wastes generated within the region. It was instrumental in creating NetWaste and continues to promote its value. An important regional initiative led by the Proponent was the development of a regional waste contract for kerbside waste collection from five LGAs (Orange, Cabonne, Blayney, Parkes and Forbes, and later extended to Bathurst). A further strategic opportunity is now available for the Proponent to lead in regional action to substantially increase resource recovery and reduce greenhouse gas production.

A.3.6.3 Infrastructure drivers

The need for action without delay is further driven by the Ophir Road landfill nearing completion. Landfill capacity is now down to 230,000 t and is being consumed at the current rate of around 54,000 t/yr. The remaining landfill life at Ophir Road RRC could be as little as four years.

A.3.7 Solid Waste and Resource Management Policy

A draft *Solid Waste and Resource Management Policy* was endorsed by the Proponent in December 2007. The broad policy aim is to increase diversion from landfill for beneficial resource recovery from 20% to 55%. The policy contains the following stewardship principles that provide guidance in preparing the Strategy and undertaking the statutory environmental impact assessment process for infrastructure components of the Strategy:

- ▶ Waste is a potential resource that should be managed as an asset rather than a liability.
- ▶ Waste should only be landfilled if it cannot be diverted, reused or reprocessed.
- ▶ Landfill space should be conserved, and efficiently managed as a community resource.
- ▶ Pricing should be used to maximise source separation and discourage receipt of mixed waste loads, where reasonably avoidable.
- ▶ Policies should be implemented in such a way that they do not cause increases in illegal dumping or economic dislocation.

The policy outcomes intended by the stewardship principles described above is clear, namely:

- ▶ Increased recovery and recycling of discarded materials;
- ▶ Clever use of recovered materials for beneficial purposes;
- ▶ Reduced disposal of waste to landfill;

- ▶ Use of landfill gate pricing policy measures to encourage separation at source of recoverable materials and delivery of streamered loads to the resource recovery centre; and
- ▶ Community participation in waste diversion for beneficial purposes and, through this active involvement, support for the policy initiatives taken.

Since 2007, when the policy was endorsed, the value of avoiding landfill disposal of putrescible and other organic waste has been recognised for its potential contribution in reducing harmful greenhouse gas production. The case for avoiding disposal of putrescible waste is particularly strong in relation to small to medium sized landfills, which do not have the scale for efficient landfill gas capture and beneficial use.

Diversion of waste from landfill is clearly consistent with the Proponent's sustainability principles, and has been adopted as an important part of the Strategy. Moreover, in line with the Proponent's commitment to regional partnerships, the development of composting facilities as an alternative to landfill will enable all participating councils to minimise greenhouse gas production and returning carbon to regional soils.

A.3.8 Orange City Resource Recovery and Waste Management Strategy

The Strategy underpins this Project and has three primary purposes:

- ▶ To ensure that the management of waste contributes fully to the Proponent's commitment to ecologically sustainable development as set out in the Proponent's *Management Plan 2009-2012*, and to enable the Orange community to play its part in protecting the local and global environment.
- ▶ To contribute positively to the objectives and the waste diversion targets of the NSW *Waste Avoidance and Resource Recovery Strategy*.
- ▶ To define and organise for delivery of the infrastructure needed for ecologically sustainable waste management and resource recovery over coming decades as current waste management infrastructure completes its life cycle.

The Strategy has been developed at a time when waste management is in transition – from a time when waste was regarded as fit only for disposal, to a new view of waste materials as potential resources, and a clear community concern about all the contributors to climate change, including waste disposal. This Strategy adopts the emerging view and draws on proven technologies and practices that facilitate re-use and recycling as preferred actions in lieu of disposal without consideration of the resource value of the discarded material.

The Strategy underpins the Proponent's commitment to ecologically sustainable regional waste management. The Strategy is based on two central themes:

1. Capturing and processing the maximum recoverable quantity of food/garden organics to keep these biodegradable materials out of landfill, create high grade compost, and reduce greenhouse gas emissions; and
2. Improving recycling of materials from households and businesses – particularly metals, glass, timber, plastics and virgin excavated natural material (VENM).

A.3.8.1 Planned policy, regulatory and program initiatives

As part of the Strategy, a number of new policy and regulatory initiatives would be progressively introduced to drive resource recovery.

Policy initiatives:

- ▶ Introduction of a third household mobile garbage bin for weekly collection of domestic garden waste together with kitchen-separated food waste (the combination is referred to in this Environmental Assessment as food/garden organics).
- ▶ Differential landfill gate pricing at a level required to encourage source separation of business recyclable materials and food wastes to provide clean streams for further processing. This will allow recovery and diversion of C&I food waste as well as greatly improved recovery of dry C&I recyclables such as timber, paper/cardboard, metals and industrial plastics.
- ▶ Increased landfill gate pricing for C&D waste to encourage source separation of recyclable materials and presentation of clean, unmixed streams. This will allow improved recovery and recycling of VENM, metals, timber and plastics.

Regulatory initiatives:

- ▶ Further development of the current requirement for building applications to include waste management plans, with extension to include recycling plans that are subject to performance review.

Program initiatives:

- ▶ Improved recovery of beverage containers, by working with NetWaste to continue improvement in event recycling opportunities.
- ▶ Action to improve the beneficial use of recycling yield from kerbside collected recyclables and C&I/C&D dry recyclables.

A.3.8.2 Implementing the Strategy

The Project as outlined in this Environmental Assessment implements the strategy with an integrated plan for improved resource recovery and residual management with proposed new operations at the Ophir Road RRC and the proposed Euchareena Road RRC. Section A.1.1 describes the following five core activities that form the Strategy implementation:

1. New residential food/garden organics waste collection system

The new weekly kerbside collection service would be provided to all households in Orange to capture domestic food and garden organics in a single special purpose bin. Neither resource is currently collected as a separate waste stream in Orange City local government area (LGA). Householders would be advised on how best to discard food scraps to a small, separate kitchen bin which can be fitted with a special starch liner bag for easy transfer of the discarded food to the food/garden organics mobile garbage bin.

Current kerbside recycling collections of comingled paper and containers would continue on a fortnightly cycle (residents can access a second recycling bin for a supplementary charge). These materials would be delivered to a relocated materials recovery facility (MRF) at the Ophir Road RRC.

The current residential garbage (mixed waste) collection system would continue in Orange LGA, but it is expected over time that the amount of food and other putrescible materials present in the waste stream would be much reduced and progressively eliminated. Hence, the residual waste collection would be scaled back from the present weekly cycle to fortnightly collections. The proposed adjustments to service frequencies are central to minimising the cost impacts of

introducing an organics collection service in Orange LGA. Education and marketing incentives will support this continued change in behaviour.

Waste and resource collection arrangements in surrounding LGAs will depend upon decisions made by the relevant Councils. Ideally other Councils would recognise the benefits of joining with the Proponent and arrange for food/garden organics to be separately collected from residual wastes. This leadership role will improve regional environmental outcomes by reducing regional greenhouse gas emissions that smaller councils cannot achieve on their own.

2. Processing of food/garden organics at the Euchareena Road RRC

Collection and processing of food/garden organics to divert this biodegradable waste from landfill and create valuable compost is a core initiative of the Orange City *Resource Recovery and Waste Management Strategy*. An alternative waste technology (AWT) facility to be located at the Euchareena Road RCC would process source-separated food/garden organics using an enclosed composting technology. This would produce a high quality compost product, returning carbon and nutrients to the soil.

The compost product would be manufactured to Grade A compost standards for AS 4454 -1999, which would make it suitable for unrestricted land application. It would be suitable for marketing to residents and local agriculturalists as an alternative to chemical fertilisers. There is some capacity to market this compost through regional landfill sites and to landscapers in the Central West. Experience from a similar enclosed tunnel composting plant using source separated organics, at Port Macquarie, indicates that there is a sustainable market for high quality compost. Furthermore, a commercial in confidence marketing strategy has been prepared which indicates there is a substantial market for the compost product in the region. Biosolids from the Orange City Wastewater Treatment Plant would also be added to the plant in-feed, to enhance compost quality and to contribute the bulk of the water required for the process.

Resource feedstock would be sourced from both the residential sector and the business sector – by extending financial incentives and community learning programs to the Orange City businesses to separate food wastes at source for direct recovery as compost feedstock.

Access to the proposed organics processing service would be offered to other regional councils. The Proponent already provides sorting of kerbside collected municipal recyclables for five nearby councils (Figure A.3-2 shows the boundaries of the LGAs forwarding kerbside recyclables to the Ophir Road RRC).

These councils would have the opportunity of further improving their resource recovery and reducing waste sent to landfill through similar arrangements. This would support attainment of the State waste diversion targets by these smaller councils, and extending the life of their existing valuable landfill space.

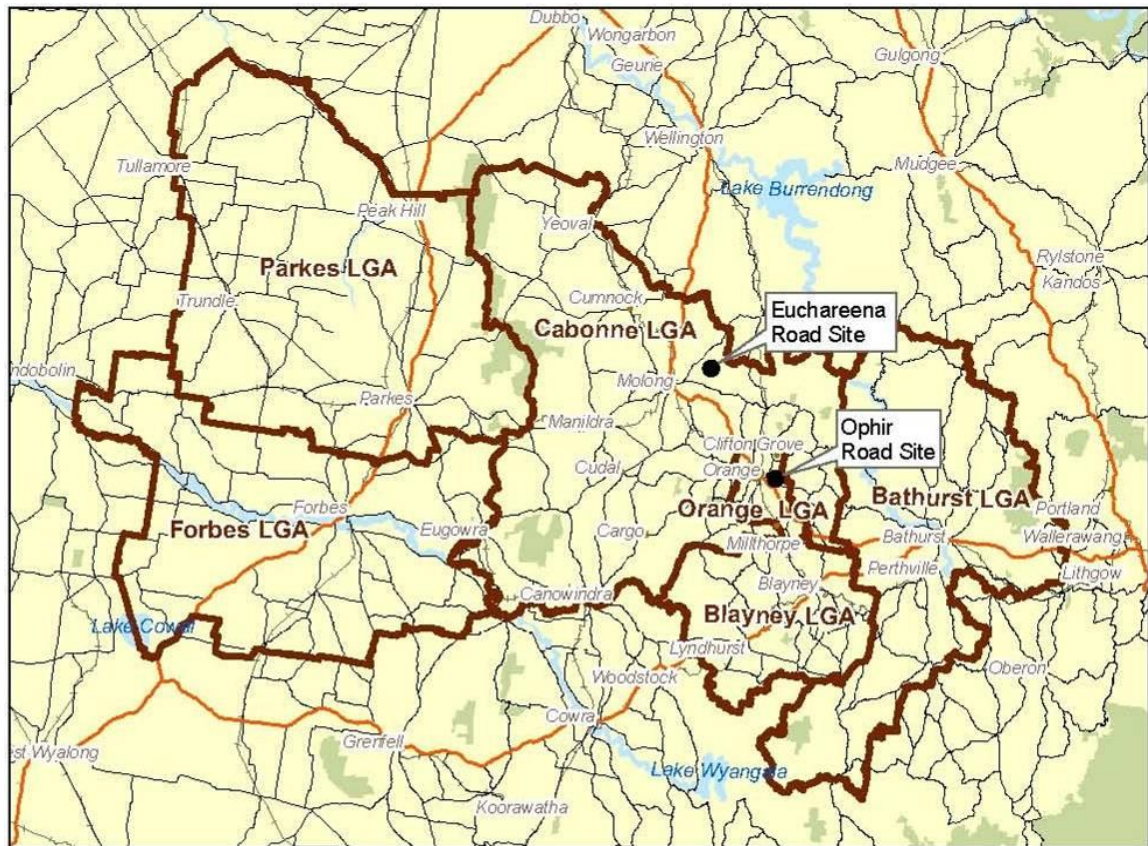


Figure A.3-2 Regional context

3. Baling of mixed residual waste at the Ophir Road RRC

With the relocation of the existing MRF to a new building on the site, a resource recovery and mixed waste baling operation would be established in the existing MRF building at the Ophir Road RRC, adaptively reusing existing infrastructure.

All mixed residual waste collected with putrescible content would be directed to this facility, where metals and other materials of value, and objects unsuitable for baling would be recovered from the waste stream, before the residual waste is baled.

Garbage compactor trucks collecting mixed residential wastes and commercial waste compactor trucks collecting waste suitable for baling would reverse into the building and unload their contents onto the floor near the baling plant infeed hopper. Equipment would then be used to extract metals, hard waste, car batteries, construction and demolition (C&D) wastes and other wastes unsuitable for baling. Metals would be placed in recycling skips, and other materials in residual waste skips.

Car batteries would be placed in a suitably bunded area until recyclers can collect them. Metals and other recyclables would be taken to the existing waste transfer station on the site and consolidated with the same materials collected there. The residual waste skip would be periodically emptied using a forklift, into a large bulk roll-on/roll-off bin, for transport to the Euchareena Road RRC.

Following the baling operation, the compacted bales would be covered and stored inside and outside the building (under cover) until ready for loading by forklift onto a curtain-sided trailer, for transport to the Euchareena Road RRC. Normally the bales would be stored for a maximum of 24 hours, but this could extend to 48 hours on rare occasions. The bales would contain very little food related material due to the separate food organics collection system operating in the Orange municipality.

The baling equipment would be maintained at night, and on weekends, so that it can be used uninterrupted for approximately 6-8 hours a day. The equipment would be sized so that it does not need to operate continuously during the day, but can be shut down for minor repairs, if necessary. For major shutdowns such as annual maintenance, the baling equipment could be out of service for 1 week or more per year.

During the first five (5) years when the baling equipment is being serviced over a planned shut-down period, mobile baling equipment would be hired by the Proponent to ensure that the waste baling service continues uninterrupted. If such equipment is not available, the waste arising from these periods would be landfilled in cells at the current Ophir Road RRC. The design of the layout of the baling building would provide sufficient space for one or more mobile balers to operate.

4. Recovery of dry recyclable materials at the Ophir Road RRC

The Proponent currently operates an extensive MRF at the Ophir Road RRC servicing kerbside collected municipal recyclables from Orange as well as five surrounding LGAs. This would continue in a new MRF building constructed at the Ophir Road RRC, with resource recovery levels boosted through a combination of new and reused sorting equipment (subject to detail in a new recycling contract to be negotiated following the application determination), and an extension of the kerbside service to small businesses and a campaign to improve domestic kerbside participation.

To increase the recovery of commercial waste, the Proponent would provide financial and other incentives to the business sector to progressively increase sorting and recovery of dry waste, including paper/cardboard, timber, plastics and metals.

MRF process residuals would be taken to the baling building for disposal with other mixed residual wastes, baled (if suitable), and transported to the Euchareena Road RRC for disposal.

5. Disposal of mixed residual waste at Euchareena Road RRC

Bales of mixed residual waste would be transported to the Euchareena Road RRC for disposal in a specially designed landfill. Bulky wastes and other wastes unsuited to baling would be separately transported to the Euchareena Road RRC for landfill disposal. These would be landfilled in areas confined by bales of waste stacked into the landfill.

Key resource recovery outcomes from implementation of the Strategy are summarised in Box 1 below.

Box 1. Key resource recovery outcomes of the Resource Recovery and Waste Management Strategy for Orange

Waste recovery and diversion from landfill – 58% overall:

- ▶ 63% of municipal waste generated.
- ▶ 53% of C&I waste generated.
- ▶ 53% of C&D waste generated.

Organic waste diverted from landfill for production of high quality compost:

- ▶ 9,100 t/yr of municipal food/garden organics.
- ▶ 2,061 t/yr of C&I food/garden organics.
- ▶ 3,650 t/yr of sewage biosolids.

Dry recyclable materials captured and recycled:

- ▶ 2,883 t/yr of kerbside collected municipal paper/cardboard, container recyclables and glass fines.
- ▶ 4,053 t/yr of C&I and C&D recyclables – paper/cardboard, timber, glass, steel, etc.

Garden waste processing for production of mulch:

- ▶ 3,000 t/yr of municipal garden waste.
- ▶ 471 t/yr of C&I garden waste.

Virgin excavated natural material diverted from landfill:

- ▶ 12,050 t/yr of VENM for Ophir Road landfill capping and remediation, and blending into soil products.

A.3.9 Future Waste and Resource Recovery Position

The expected waste and resource recovery position for Orange (based on 2007/08 data) is set out at Table A.3-2 below (excluding all regional waste and recycling inputs). The estimates included in this table have been developed on the basis of experience in other resource recovery settings supplemented by application of conservative assumptions and forecasts.

Table A.3-2 Orange City annual future waste and resource recovery position

	Municipal (t)	C&I (t)	C&D (t)	Total (t)
Waste Generated	30,250	20,467	14,854	65,571
Waste Diverted for Recycling	18,980 (63%)	10,870 (53%)	7,897 (53%)	37,747 (58%)
Dry materials recycling ¹	2,883 ²	2,213 ³	1,840 ³	6,936
Recovered materials – self hauled small loads	197	125	57	379
Community recycling	100	0	0	100
Garden waste	3,000	471	0	3,471

	Municipal (t)	C&I (t)	C&D (t)	Total (t)
Biosolids recovery	3,650	0	0	3,650
VENM recovery ⁴	50	6,000	6,000	12,050
Food/garden waste	9,100	2,061	0	11,161
Waste Disposal to Landfill	11,270	9,597	6,957	27,824

Source: Estimates developed by Orange City Council and project team based on data for 2007/08.

Notes:

1. Excluding regional council kerbside recyclables currently processed at the Ophir Road MRF
2. Kerbside recycling only, net of contamination and wastage in MRF processing.
3. Largely streamered dry business materials including paper/cardboard, timber, glass, steel, etc.
4. VENM used for landfill cell capping and remediation is included as designated recycling; VENM used for daily cover and landfill road construction is not regarded as nor counted as recycling.

The main estimates and assumptions used in constructing this forecast are described in Table A.3-3 below.

Table A.3-3 Basis of estimates and assumptions

Category	Rationale
Waste generated	Maintained exactly as at present for comparative purposes.
Dry materials recycling	Municipal waste sector: a near-term 15% improvement in net kerbside recycling yield brought about by securing beneficial use of a proportion of the glass fines produced in MRF sorting of recyclables and by extending the application of event-based recycling. This could improve the gross recovery haul by around 100 t/yr to 3,860 t/yr (a 2.7% increase giving a net 80 t/yr yield). More importantly, the beneficial recycling of glass fines is expected to contribute 300 t/yr in net recycling, bringing the net increase in recycling yield to 380 t/yr for a total of 2,883 recycling t/yr. Further progressive improvements would be made toward improved beneficial use of all glass fines. C&I waste sector: increased C&I materials recycling with a focus on paper/cardboard, timber, and steel. This would be achieved through increased landfill gate-price applicable to mixed waste loads to encourage source separation and delivery of streamered materials to Ophir Road. These materials are estimated to constitute around 34% of C&I waste generated (excluding captured VENM). The landfill gate-price policy initiative and the introduction of kerbside recycling collection for small business is conservatively estimated to capture around 50% of the target materials (2,460 t/yr) which is estimated to yield a net 38% recycling (2,213 t/yr). This would provide a solid near-term contribution to the dry recycling haul which would be followed by progressive further improvements. C&D waste sector: increased recycling of timber, steel, and brick/rubble material to contribute 1,840 t/yr to the overall recycling of C&D waste.
Recovered materials – self hauled small loads	Maintained exactly as at present for comparative purposes.
Community recycling	Maintained exactly as at present for comparative purposes.
Garden organics (self haul)	Garden waste delivered to the Ophir Road RRC is currently chipped and mulched. The product is in much demand by Orange residents and it is proposed that current practice will be continued. A high proportion of present garden waste receipts are delivered by the trailer

Category	Rationale
	load following weekend gardening activities. Much of the upper-scale of delivery demand is expected to continue following introduction of the proposed food/garden waste collection service. Municipal waste sector: reduced to 3,000 t/yr as a result of implementation of weekly food/garden waste collection. C&I waste sector: maintained exactly as at present for comparative purposes.
Biosolids recovery	Recycling level maintained exactly as at present, though the material will contribute to production of high quality compost.
VENM Recovery	Much of the VENM currently received is used as daily cover and for temporary road construction within the Ophir Road landfill void. This is not classed as resource recovery and the material occupies landfill capacity. On the other hand, around 12% of received VENM is currently recovered as a resource for the recognised beneficial use of landfill cell capping and remediation. It is proposed to recover up to 75% of available VENM for use in compost product development, and in capping completed cells at the Ophir Road landfill and remediating the site after its completion. The landfill capping and remediation demand will progressively increase over the next five years. Toward the end of this period, compost product and market development is planned to have ramped-up to utilise much of the material that will no longer be needed for landfill capping and remediation. A VENM pricing strategy would be introduced to encourage on-site use of VENM for construction projects, and re-use on other construction sites and mining voids requiring rehabilitation. This would reduce quantities received in the future. Waste recycling plans associated with new developments would be used to implement these strategies, and prevent VENM from other LGAs having to be being disposed of (and occupying valuable landfill space) in the new Euchareena Road landfill. Municipal waste sector: diversion from landfill of 50 t/yr. C&I waste sector: diversion from landfill increased from the present (estimated) 750 t/yr to 6,000 t/yr. C&D waste sector: diversion from landfill increased from the present (estimated) 750 t/yr to 6,000 t/yr.
Food/garden organics processing	Composting of food/garden organics from the municipal and C&I sectors, together with biosolids, is a cornerstone of the resource recovery strategy. Municipal waste sector: a recent waste audit showed that Orange residual waste bins are rich in food/garden waste – these organics comprised 71% of the kerbside collected residual waste haul, or 9,561 t/yr. In the future, the residual waste bin content will be split between the food/garden organics bin and the residual waste bin. A 70% food/garden capture rate is estimated to recover 6,693 t/yr for processing. The organic content of this potential source will be increased with the addition of garden waste no longer self-hauled to the Ophir Road RRC – estimated that 1,547 t/yr will be redirected from self-haul to municipal food/garden waste bins. Thus, it is estimated that a net 8,240 t/yr can be recovered in the near to medium term through a weekly dedicated organics collection service. This resource can be supplemented by: Council street sweepings and park waste – in the order of 1,068 t/yr; and the organics portion of self-hauled municipal waste amounting to a net 270 t/yr. Thus, total resource reprocessing from the municipal sector is estimated to amount to a gross 9,484 t/yr (net 9,100 t/yr). C&I waste sector: food waste comprises an estimated 30% of C&I waste generated (excluding captured VENM). The landfill gate-price policy initiative and business recycling advice program is conservatively estimated to capture around 50% of food waste or 2,170 t/yr (2,061 t/yr net of contaminants).

Table A.3-4 shows the future waste flows with implementation of the Project, excluding regional council waste inputs (except current regional kerbside recycling processed at the Ophir Road MRF and landfilling of rejects and glass fines from the regional kerbside recyclables).

Table A.3-4 Future waste flows (excluding regional council waste inputs)

Item	Quantity (t/yr)
Baled waste transfer to Euchareena Road	18,459
Non-baled waste transfer to Euchareena Road	6,788
VENM transfer to Euchareena Road	4,000
Leachate disposal to STP	8,500
Ophir Road MRF throughput ¹	12,568
Biosolids delivered to site	3,650
Food and garden organics collected	11,654
Total material composted	15,304
Compost rejects	560
Compost produced and delivered to market	10,315
Total baled waste landfilled	18,459
Total non baled waste landfilled	10,788
Total waste landfilled ²	29,740

Notes: 1. Includes current regional kerbside recycling processed at Ophir Road MRF

2. Includes rejects and glass fines from the regional kerbside recyclables

Table A.3-5 presents a comparison of the current and future (with implementation of the project) resource recovery and waste statistics for Orange City (not including any regional waste or recyclables).

Table A.3-5 Orange resource recovery and waste comparison (t/yr)

	Municipal		C&I		C&D		Total	
	Current	Estimated Future	Current	Estimated Future	Current	Estimated Future	Current	Estimated Future
Waste Generated	30,250	30,250	20,467	20,467	14,854	14,854	65,571	65,571
Waste Diverted from Landfill for Recycling	10,997 (36%)	18,980 (63%)	1,346 (7%)	10,870 (53%)	807 (5%)	7,897 (53%)	31,150 (20%)	37,747 ¹ (58%)
Waste Disposal to Landfill	19,253	11,270	19,121	9,597	14,047	6,957	52,421	27,824 ²

Notes: 1. Excludes current regional kerbside recycling processed at Ophir Road MRF

2. Excludes rejects and glass fines from the regional kerbside recyclables



The future waste flows for Orange City (excluding regional waste inputs, but including existing regional recycling) are shown Figure A.3-3. Figure A.3-4 shows the future waste flows with full regional use of composting and landfill facilities. Note that both Figure A.3-3 and Figure A.3-4 incorporate both gross input flows and net yield flows post-processing.

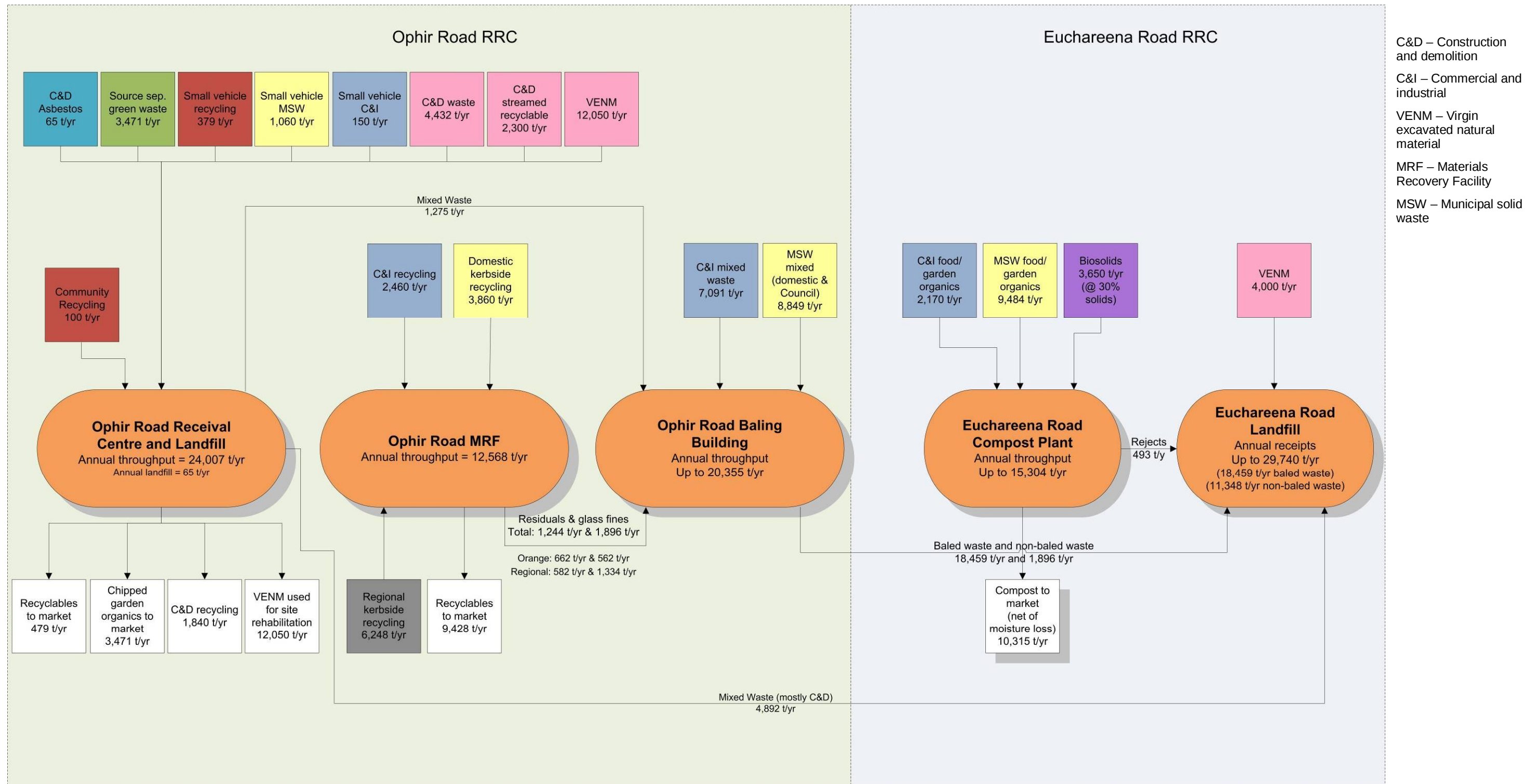


Figure A.3-3 Future waste flows for Orange City (including existing regional recycling)

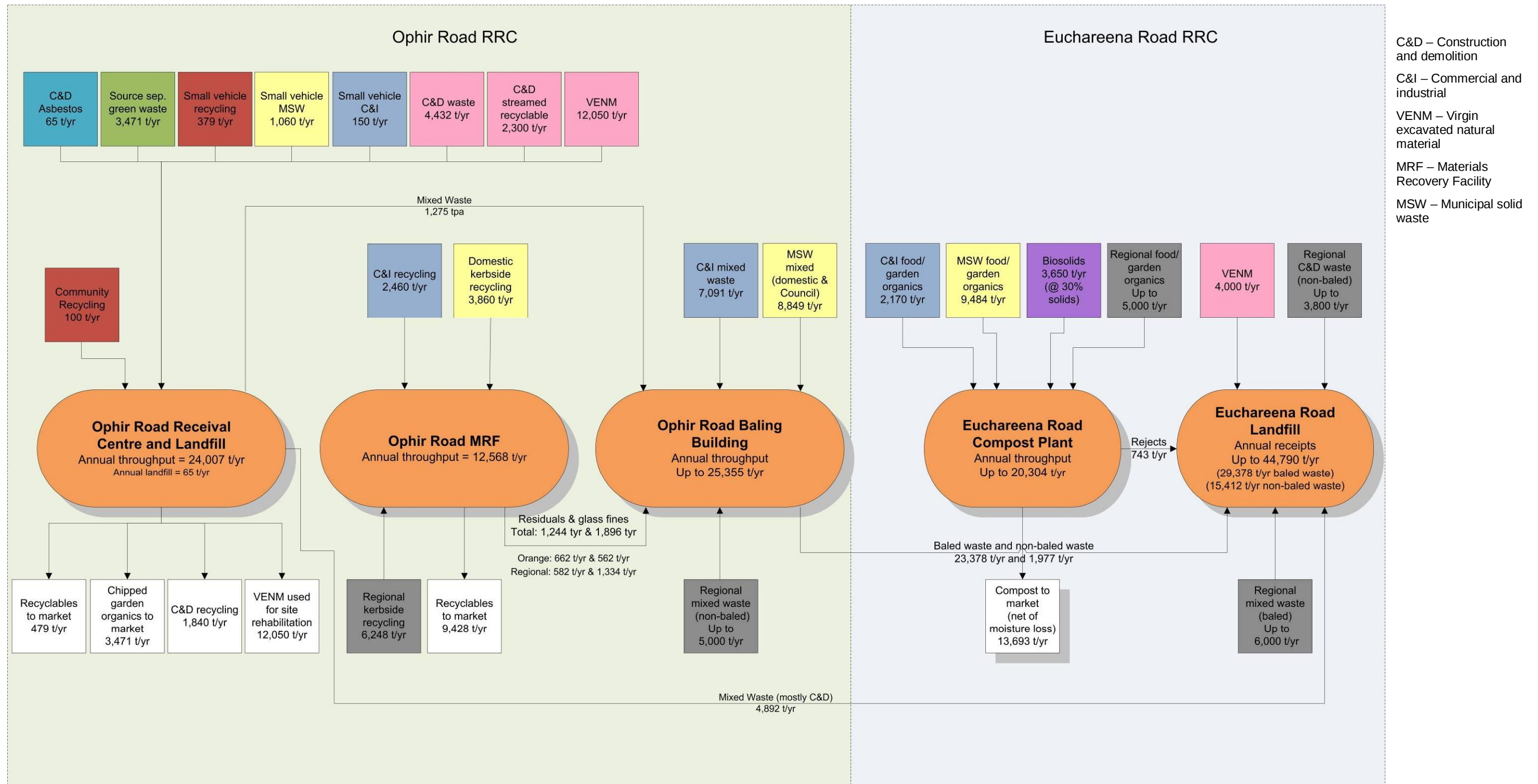


Figure A.3-4 Future waste flows assuming full regional use of composting and landfill facilities

A.3.10 Recycled Product Strategy

The Proponent has in place a well developed strategy for delivery of recycled resources to relevant markets. The Orange City *Resource Recovery and Waste Management Strategy* would result in the expansion of the recovered product range and provide the opportunity for new markets to be developed. Although important potential markets have been demonstrated to exist for the range of new products, business planning has been completed on the assumption that no revenue is attributed to these products.

Current Products

- Recycled paper, cardboard and containers – despatched to specific reprocessors.
- Mulch and chipped timber made from garden waste and recovered timber – made available at no charge to the Orange community.
- Scrap steel – despatched to specific reprocessors.
- Furniture and white goods – cleaned-up and sold as used products through the Recovery Shop at the Ophir Road RRC.
- VENM – currently used mainly as daily cover for landfill operations (not classed as recycling), with a moderate amount used for landfill cell capping and remediation.

Future product additions

- Increased local beneficial use of glass fines which are currently a waste bi-product of MRF sorting of kerbside collected recyclables.
- C&I sector sourced paper/cardboard and steel for reprocessing; timber for reuse or chipping and use in local applications.
- C&D sector sourced steel for reprocessing; timber for reuse or chipping and use in local applications; brick/rubble for local use as fill material.
- A range of high quality compost products for garden, landscape, and agriculture applications as identified in a (commercial-in-confidence) product market strategy developed for Orange City Council. The product market strategy identified promising opportunities for potential products including:
 - Compost product classified as Grade A³ and meeting AS 4454 -1999⁴, suitable for unrestricted land application.
 - Landscaping soil mix comprising blended VENM and Grade A/AS 4454 compost mixed in a range of possible ratios for various applications.

³. NSW EPA. Environmental Guidelines – *Use and Disposal of Biosolids Products*. 2000.

⁴. Australian Standard AS 4454 – 1999. *Composts, soil conditioners and mulches*. 1999.

A.4 Justifiable Demand

This section presents a consolidated summary of the justifiable demand for a new landfill facility as an integral part of the Resource Recovery and Waste Management Project. The Project comprises dry materials recycling, organic waste processing and residual waste disposal.

A.4.1 Context

Provisions of the *State Environmental Planning Policy (Infrastructure) 2007* require that the Consent Authority must be satisfied that justifiable demand exists for the development of a landfill, having regard to the provisions of the *NSW Waste Avoidance and Resource Recovery Strategy and the WARR Act*, and that the location of the facility is consistent with regional planning strategies. The policy provisions aim to avoid development of unwarranted or excess landfill capacity that may crowd-out resource recovery initiatives.

On the other hand, responsible public infrastructure planning aims to ensure that sufficient capacity exists to allow for safe disposal of residual waste following efficient resource recovery actions.

A.4.2 Key Issues

A.4.2.1 Capacity/demand position at the Ophir Road landfill

Remaining capacity of the Ophir Road Landfill at end June 2009 was estimated to be approximately 230,000 m³ or 230,000 t. Landfill capacity is currently being drawn down at a waste input rate of around 54,000 t/yr (2007/08). At the current waste input rate, the remaining life of the Ophir Road landfill facility would be less than four years, with cessation of landfilling for the majority of municipal, commercial and industrial, and construction and demolition wastes expected to occur in June 2013. It is noted that the Ophir Road Site would continue to be used for resource recovery activities, as well as landfilling of wastes that may be more suited to landfilling at the Euchareena Road RRC given their nature and small quantities.

The Strategy would increase the level of resource recovery in Orange to 58%⁵. Despite this very high level of resource recovery, nearly 28,000 t/yr of Orange residual waste would require landfill disposal. This demonstrates the continuing requirement for landfill disposal of residual materials from which no further value can be efficiently gained, and the realistic diversion rate achievable with even the most advanced of resource recovery strategies. Moreover, the Strategy would necessarily require a ramp-up period, with implementation progressing over a three to four year period. Thus, there is no scope for a rapid gain from early implementation of the strategy to stave off landfill for more than a couple of months.

A further consideration is the need to reserve a measure of landfill capacity for emergency disposal requirements such as animal carcasses/asbestos. Contingency capacity is a critical requirement for any community waste facility.

This analysis demonstrates that a maximum of only around four years of existing landfill capacity is available. A clear justifiable demand therefore exists for provision of new landfill capacity. The

⁵ This exceeds the current level of resource recovery for Sydney – which is assisted by a waste disposal and environment levy currently at nearly \$47/tonne.

capacity/demand ratio has reached the point at which the need for new landfill capacity must be promptly addressed. Expected timing of the key elements of the Project is such that if the project is approved in late 2009, all of the key elements of the Project would be in place no earlier than December 2012, only six months before the expected closure of the Ophir Road landfill for the majority of waste landfilling. This allows sufficient time for design and licensing of the Euchareena Road landfill, and for tendering and construction of the enclosed tunnel composting plant, the baling facility and new MRF at Ophir Road RRC.

A.4.2.2 Alignment with the provisions of the NSW Waste Avoidance and Resource Recovery Strategy

The Strategy is fully aligned with the NSW Government's direction for waste as expressed in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*. The Proponent's Strategy is built around a high level of food/garden organics recovery (from both municipal and C&I sectors) in order to maximise diversion of organics from landfill. This will greatly reduce the disposal of materials that contribute most to the formation of greenhouse gases in landfill. These rich organic resources will provide quality feedstock for production of valuable compost to improve the quality of local landscapes and reduce the need for chemical fertilisers.

The Proponent's Strategy also features improved recovery and recycling of household paper and containers collected through the kerbside recycling scheme. The Strategy will also focus on improving of business sector resource recovery (both C&I and C&D) to recycle paper, timber, metals and plastics.

A.4.2.3 Alternative existing waste disposal landfill sites

The alternative of transporting residual waste (after separate collection of organics and composting at a site in the Orange area (as per the Project) or all wastes (excluding VENM) to an existing landfill already in operation at a regional centre, has been explored. A landfill facility with significant future airspace exists at Dubbo, some 150 km from Orange (a 300 km round trip). The notion of transporting residual waste to Dubbo for disposal is disadvantaged by the prohibitive transport distances involved, the foregone opportunity for beneficial waste processing in Orange and the surrounding region, and the consequent scale of the residual waste transport task. The scheme is further disadvantaged by the probable need for the landfill host to gain appropriate statutory approvals to receive substantially increased waste tonnages. The current approval for the Dubbo facility was obtained many years ago, and the ability to use this approval for substantially increased tonnages is uncertain.

This alternative project also has a commercial drawback in that it would also leave the Proponent open to gate pricing and waste management practices over which limited recourse was available. This includes the potential for the Proponent to be liable for future carbon pollution reduction scheme (CPRS) charges and waste levies, over which it has no control. Moreover, because insufficient space is available at the Ophir Road Site for waste processing, this option would not assist the Proponent in achieving the NSW waste avoidance and resource recovery targets.

The analysis demonstrates that use of the nearest potentially available large-scale landfill does not offer a sustainable solution. This further confirms that clear justifiable demand exists for provision of new landfill capacity in the immediate region.

A.4.2.4 Potential to crowd-out resource recovery actions

The Strategy has, as its centrepiece, a greatly improved level of resource recovery. However, with this and other advanced resource recovery schemes, disposal arrangements are necessary for residual wastes from which no value can be efficiently gained. This includes process residuals and those materials which are unsuited for processing.

The proposed new landfill facility for disposal of residual waste is certainly a part of the multi-faceted project for which approval is sought. The landfill, however, is seen by the Proponent as the final activity in an integrated set of resource recovery initiatives that make up the Strategy. It is required to serve an important public purpose within the comprehensive Strategy as the safe disposal point.

A.4.2.5 Protection of the environment

The Proponent recognises the importance of improving environmental standards for landfill design and management. This Environmental Assessment demonstrates a landfill philosophy based on the idea of actively avoiding landfill disposal of much of the greenhouse gas-forming food/garden organics generated by the community and business. Processing of this organic material to create compost averts its potential to form harmful greenhouse gases during the biodegradation process in the landfill. In addition, management of the landfill by the Proponent enables landfill gas management measures to be implemented to minimise the emissions of methane to the environment, and thereby minimise the likelihood that Orange residents would be subject to CPRS charges under the scheme proposed by the Commonwealth Government.

This approach will also minimise the formation of potentially harmful leachate in the landfill. Any leachate created through rainfall on the active cell areas would be captured and transferred to the Orange Wastewater Treatment Plant for processing.

The environmentally sound landfill philosophy is also distinguished by the decision that household residual waste would be compacted and baled for transport from Orange to the proposed Euchareena Road RRC. This would minimise the number of truck movements associated with the transfer of these wastes. The waste will then be buried while still in the compacted state. This will largely eliminate the risk of propolis foraging by honey bees and will protect the local environment from the potential effects of wind-blown litter, odour, and vermin/vector strike.

A.4.2.6 Consistency with regional waste planning strategies

As previously outlined in section A.3, the Proponent is a member and host of NetWaste, a regional grouping of 28 local councils covering the Central West and Orana Regional Organisations of Councils. NetWaste has been supported with advice and financial assistance by DECCW since its establishment in 1996. In particular, DECCW has sponsored the development of two regional resource recovery strategies for the Central West/Orana – the latest being the *NetWaste Regional Resource Management Plan 2008* which has superseded the 2001 plan.

Both the 2001 and the 2008 regional plans included actions relating to the need to rationalise the 117 Council-operated landfills in the NetWaste region in order to maximise protection of the environment and minimise long-term risks and liabilities. It is important to note that only 13 landfills in the region are licensed by the EPA and up to 58 are unsupervised.



The regional plans note the need to replace the Ophir Road landfill at Orange as it nears completion. Based on data provided by the Proponent and Cabonne Council, the NetWaste councils noted and endorsed the development of the proposed Euchareena Road RRC.

A.5 Stakeholder and Community Consultation

A.5.1 Statutory Consultation

The Proponent liaised with all relevant local and State Government agencies to outline the key components of the new proposed project i.e. for both the Euchareena Road and Ophir Road Sites and to seek an understanding of the issues that need to be addressed in this Environmental Assessment.

The Director-General's requirements for the Project have been sought from the Department of Planning.

A.5.2 Community Consultation

The aim of community consultation is to achieve a high-level of awareness about the Project, community understanding of the operational aspects and benefits of the Project, and incorporate community feedback into the Environmental Assessment.

A.5.2.1 Activities

A number of consultation activities took place during the preparation of the Environmental Assessment. An overview of these activities is outlined below.

1800 number

A 1800 number was established at the commencement of the Project to enable all stakeholders to provide feedback to the project team for consideration in the Environmental Assessment.

Newsletter

A newsletter was prepared to introduce the new project to the community and provide information on the ways that people could find out more detail of the Project and have their say. The newsletter provided information on the environmental assessment process, how the resource recovery and waste management project will work, what it will deliver for the environment and how it will affect residents.

The newsletter was distributed at the community information days and the community focus group meetings held in May and is available for viewing on the project website (www.ghd.com.au/orangewasteproject).

Feedback forms

A reply-paid feedback form was prepared and distributed with the community newsletter at the community information days and community focus group meetings. This form is also available on the project website. All participants at these events were encouraged to complete a feedback form and distribute copies to neighbours, work colleagues and other interested parties for completion.

The feedback form asked stakeholders to record their priority issues for consideration in the Environmental Assessment, along with any other comments they may have on the Project. A total of 34 feedback forms were received. These submissions were provided with an identification number and comments recorded in a stakeholder database.



Community information days

Community information days were conducted at the Molong Community Hall in Bank Street, Molong on Friday 8 May 2009 between 9 am and 2.30 pm and Saturday 9 May 2009 between 10 am and 4 pm. The days were attended by four GHD representatives, and provided an opportunity for local residents to view the proposed plans and speak to members of the project team. Display boards featured the proposed Euchareena Road Site and images of the recycling and waste system. The days were informal and relaxed, and participants were encouraged to read the community newsletter and complete the feedback forms, and discuss any specific issues with members of the project team.

Landholder consultation

Consultation was undertaken with landholders surrounding the Euchareena Road Site. Details of landholders were obtained from the Proponent and Cabonne Council and GHD contacted these landholders where possible to meet and discuss the Project.

'Bang the Table' web forum

'Bang the Table' is a web-based forum, which provides a moderated space for online discussions of projects.

Two 'Bang the Table' forums were established for this project:

- ▶ An open forum, accessible to anyone who wishes to comment on the Project;
- ▶ A closed forum, between a small number of local people who were invited by GHD following random selection from a community panel.

Community focus groups

GHD facilitated two community focus groups as part of the community consultation process. A community focus group is an intimate consultation activity involving a small number local residents who have been invited to attend. The purpose of a focus group is to facilitate discussion amongst residents in an effort to capture relevant issues related to the Project.

For the purpose of capturing the views of both Orange and Molong residents, GHD conducted a community focus group in each city/town. The Orange community focus group was held at the Orange Ex-Services Club on Wednesday 27 May 2009 and at Langdons on Peabody Road, Molong on Thursday 28 May 2009. Each focus group commenced at 6.30 pm and ran for approximately two hours. Of a total of ten residents invited to each focus group, five residents were in attendance at the Orange focus group, and four at the Molong focus group.

Group members for each focus group were selected randomly, following indication in the Orange and in the Cabonne Community Satisfaction and Attitude Survey that they would be interested in becoming involved in future Council research. Following registration of their interest in attending the focus group, participants were sent a confirmation letter and a copy of the newsletter. They were also encouraged to fill out the feedback form or contact the 1800 number should they have any concerns or questions in the future.

A.5.2.2 Summary of responses

Table A.5-1 provides a consolidated summary of responses received from the above consultation activities.

Table A.5-1 Summary of responses

Issue		Coverage in Document
Traffic	In Molong	Sections C.4.11, E.1 and E.4
	▸ Impact on pedestrians and transporters used by senior/disabled citizens ▸ Impact on transport services ▸ Increased traffic flow through Molong ▸ Standard of Mitchell Highway and Euchareena Road intersection ▸ Impact on Myers Park and memorial ▸ Impact on existing bridge Euchareena Road ▸ Road width ▸ Impact of school bus and students ▸ Impact on livestock and machinery movements ▸ Impact on bowling club patrons ▸ Road realignment and impact on land resumption ▸ Impact on east Molong residential development Other ▸ Size and type of vehicles ▸ Number of trucks and previous traffic counts ▸ Rail transfer ▸ Unauthorised use of local roads ▸ Route from Forbes and Dubbo ▸ Alternative routes ▸ Back loaded trucks	
Site selection and land use	▸ Loss of prime agricultural land ▸ Site selection process ▸ Consideration of alternative sites ▸ Distance from Orange ▸ Minerals recovery ▸ Impact on local land values	Sections C.4.1, D.1.3, E.1, E.2, E.3, and D.1.6
Water	▸ Source of water ▸ Impact on local water supplies ▸ Contamination of groundwater and generation of leachate ▸ Impact on aquifer ▸ Soil suitability	Sections C.4.1, C.4.2 and C.4.3.

Issue		Coverage in Document
Social Equity	- Benefits for Molong - Job generation	Section D.1.
Cost	- Project costing - Impact on Council rates - Road upgrade costs - Viability of project - Cost of balers - Cabonne Council financial contribution	Section D.1.
Bee/Apiary	- Impact on local apiary business - Food security - Bee access to food waste - Independent assessment - Bale breakage	Section C.4.6.
Composting facility	- Market analysis - Organisation of facility - Purchase of compost products - Use of existing ANL facility - Commercial food waste	Sections C.1.5 and D.1.
Regional role of facility	- Restrictions imposed by baling - Waste quantities	Section A.3.
Noise	Impact of increased trucks and exhaust breaks	Sections B.5.8 and C.4.12.
Consultation process	- Unanswered questions - Orange City Council representation - Mailing list - Additional community consultation - One on one landholder consultation - Orange consultation activities - Lack of transparency	Section A.5.
Cabonne Council involvement	- Cabonne Council involvement - Cabonne and Orange Council arrangement	Not applicable. Cabonne Council has withdrawn from the joint venture.
Sustainability	Impact on ESD	Sections D.1.5 and PART G.

Issue		Coverage in Document
Approval process	▶ Part 3A process ▶ Future modifications approval	Section A.1.4.
Other	▶ Fencing ▶ Vegetated corridor ▶ Previous court ruling ▶ Road distance discrepancies ▶ Eliminate court involvement ▶ Orange City Council should start again	

A.5.3 Previous Consultation

The consultation for the new project has effectively built upon the previous consultation for the 2005 proposal. Hence a brief overview of the previous consultation is presented, as follows.

A.5.3.1 Government consultation for 2005 EIS

During the initial stages of the preparation for the 2005 EIS, the Proponent and consultant that prepared the EIS, R.W. Corkery & Co. Pty. Limited (RWC) consulted and met with representatives of the following government agencies for a Planning Focus Meeting on 7 August 2002:

- ▶ PlanningNSW (now Department of Planning);
- ▶ National Parks and Wildlife Service (now Department of Environment, Climate Change and Water (NPWS));
- ▶ Environment Protection Authority (now Department of Environment, Climate Change and Water (EPA));
- ▶ Roads and Traffic Authority;
- ▶ NSW Agriculture (now Industry and Investment NSW (Agriculture));
- ▶ Department of Health;
- ▶ Department of Land and Water Conservation (now Department of Environment, Climate Change and Water); and
- ▶ Department of Mineral Resources (now Industry and Investment NSW (Mineral Resources)).

Throughout the preparation of the 2005 EIS, contact was maintained with relevant government agencies on specific issues that had arisen during environmental studies and assessments for the site. Particular emphasis was placed upon discussions with the DPI – Agriculture with respect to bees and DPI – Mineral Resources with respect to potential mineralisation beyond the Copper Hill area and beneath the Euchareena Road Site.

A.5.3.2 Community consultation conducted for 2005 EIS

The community consultation program for the 2005 EIS focussed upon three main groups, namely:

- ▶ Those adjacent to or likely to be directly impacted upon by the construction and/or operation of the Euchareena Road Facility;

- ▶ Those adjacent to the principal transport route (Euchareena Road) between the Euchareena Road Site and Molong; and
- ▶ Those within the wider community of Orange City and Cabonne LGAs that have an interest in the way that wastes are managed within the two LGAs.

Consultation involved direct contact and meetings with individual residents / landholders, wide circulation of a Forum for Feedback Newsletter (1,300 households) and a follow-up newsletter and information. A total of 130 people attended six community forums held in Molong to discuss each of the main environmental issues with a number of the Specialist Consultants involved in the technical / scientific studies for the EIS. In order to canvas the wider community, the Proponent commissioned a survey to determine the Orange community attitude toward a range of waste management issues (Environmetrics, 2004). An evaluation of the 2,235 surveys returned established the following:

- ▶ 32% of respondents believed Council had a shortage of landfill space while 56% were unsure.
- ▶ Of those who believed there was a shortage of landfill space, 50% thought the Ophir Road landfill had only 5 to 10 years life remaining.
- ▶ 91% of respondents agreed it is important to reduce waste sent to landfill.
- ▶ 'Introducing a waste treatment process that recovers wastes and produces a resource and returns residual waste to landfill' was the third most important waste reduction method after 'educating consumers' and 'identification of new recyclable product markets'.
- ▶ In response to the question 'If Council introduced a waste treatment process to improve environmental benefits, would you be prepared to pay for the service?', 43% (yes) answered if it equated to the current waste disposal cost and 30% answered (yes) if the increase was no greater than 20¢ per week.

The overall community consultation process identified a wide range of issues for coverage in the 2005 EIS.

A.5.4 Director-General's Environmental Assessment requirements

The Director-General of the Department of Planning issued requirements for matters to be addressed in the Environmental Assessment. A summary of the requirements is provided in Table A.5-2, together with the relevant section of the Environmental Assessment that addresses each matter. A copy of the Director-General requirements is provided in Appendix B.

Table A.5-2 Summary of Director-General's requirements to be addressed

Issue	Summary of matters to be addressed	Reference in the Environmental Assessment
General requirements	An executive summary	Executive summary
	Detailed description of:	
	▶ The waste strategy (or strategies) that underpins the development of the Project; ▶ The past, existing and approved operations on the Ophir Road Site, including copies of any statutory approvals that regulate the ongoing waste operations on site; and	Section A.3 Section A.1

Issue	Summary of matters to be addressed	Reference in the Environmental Assessment
	Past and existing operations on the Euchareena Road Site;	Section C.2.5.4
	A detailed description of the Project	Sections B.1.4 and A.1
	A comprehensive risk assessment of the potential environmental impacts of the Project, identifying the key issues for further assessment for each of the sites that form part of the Project	Sections B.4 and C.3
	A detailed assessment of the key issues (refer below)	Refer below
	A statement of commitments	Section PART F
	A conclusion justifying the Project	Sections G.2 and G.3
	A signed statement from the author	Front of document
Key issues	Soil and water Odour and air quality Greenhouse gas Noise Transport Biodiversity Aboriginal Heritage Visual Socio-economic assessment, paying particular attention to: - Agricultural capability of the site and region; - Surrounding apiary industry; - Mineral resources; - Waste minimisation and resource recovery in the region.	Sections B.5.1, B.5.2, C.4.1, C.4.2, and C.4.3 Sections B.5.6 and C.4.10 Section D.2 Sections B.5.8 and C.4.12 Sections B.5.7 and C.4.11 Sections B.5.3, C.4.4 and C.4.5 Sections B.5.4 and C.4.7 Sections B.5.9 and C.4.13 Section D.1 Section D.1.3 Sections C.4.6 and D.1.4 Section D.1.6 Section A.3.9
Consultation	Required consultation with: - Department of Environment & Climate Change; - Department of Primary Industries; - Department of Water and Energy; - Roads and Traffic Authority; - Cabonne, Parkes, Forbes, Blayney & Bathurst Councils; - Community groups and affected landowners.	Section A.5 - Table A.5-3

The following agencies were requested by the Department of Planning to provide input into the Director-General's Environmental Assessment requirements:

- Department of Environmental and Climate Change and Water (DECC) (now DECCW);
- Department of Primary Industries (DPI) (now Industry and Investment NSW);

- ▶ Department of Water and Energy (DWE) (now DECCW);
- ▶ Roads and Traffic Authority (RTA); and
- ▶ Cabonne, Parkes, Forbes, Blayney and Bathurst Councils.

Letters requesting input on the Project were also sent by GHD to each organisation. The issues raised in the responses received are outlined in Table A.5-3 with a cross reference to where the issues are addressed in the Environmental Assessment.

Table A.5-3 Issues raised by agencies

Stakeholder	Key issues	Document reference
DoP Major Hazards Unit	Assess hazards and risks posed by gases produced	Section C1.5.8
	Assess hazards and risks posed by storage of materials at the Ophir Road Resource Recovery Centre	Section B.5.5
	Preliminary risk screening in accordance with SEPP 33	Sections B.5.5 and C.4.9
DECC (now DECCW)	Impacts on groundwater quality	Sections B4.3 and C4.3
	Impacts on surface water quality	Sections B4.2 and C4.2
	Impacts of noise and vibration	Sections B4.10 and C4.12
	Impacts on air quality	Sections B4.8 and C4.10
	Impacts on biodiversity values	Sections B.5.3, C.4.4 and C.4.5
	Impacts on Aboriginal cultural heritage values	Sections B4.5 and C4.7
	Waste management	Section A.3
DPI (now Industry and Investment NSW)	Consider necessity of mitigation measures	Section C.4.6
	Determine whether additional expenditure is warranted through scientific advice	Section C.4.6
DWE (now DECCW)	Water supply, interception and extraction assessment	Sections B1.6.1 and C.4.2
	Water demands, sources (surface and groundwater), disposal methods and storage structures	Sections B1.6.1 and C.4.2
	Water management	Section A.3
	Existing and proposed water licensing requirements	Section C.4.3
	Assessment of impact on adjacent licensed water users, basic landholder rights, and groundwater-dependant ecosystems	Section C.4.3
	Requirement to intercept groundwater and predicted dewatering volumes, water quality and disposal/retention methods	Section C.4.3
	Impact assess of construction, operation and final landform of proposed facility to meet requirements of NSW State Groundwater Policy framework document.	Section C.4.3
	Mitigation and monitoring	Sections C.4.3.4 and C.4.3.6
RTA	Traffic study	Sections B4.9 and C4.11
	Road safety	Sections B4.9 and C4.11
	Construction traffic management	Sections B4.9 and C4.11

Stakeholder	Key issues	Document reference
	Access conditions	Sections B4.9 and C4.11
	Pavement condition and proposals	Sections B4.9 and C4.11
	Sight distance at affected intersections/access	Sections B4.9 and C4.11
	Drainage	Sections B.5.2 and C.4.2
	Bicycle and pedestrian management	Sections B4.9 and C4.11
	Road noise generated on haul route/s	Sections B.5.8 and C.4.12
	Light vehicle access and parking	Sections B4.9 and C4.11
Cabonne Council	Evaluate alternative routes	Section E4.1
	Consider Euchareena Road/Betts Street intersection	Section C.4.11
	Explore waste generation elsewhere in the region and the transport routes identified for these regions and their impacts	
Parkes, Forbes, Blayney and Bathurst Councils	No comments received	

A.5.5 Additional Correspondence from Agencies

During the Adequacy Review period, a letter from the Director General of the NSW Department of Primary Industries was sent to the Department of Planning (included in Appendix C). It stated that the draft Environmental Assessment document that was submitted for adequacy review was adequate for public exhibition. It also stated that the document addressed issues relevant to the primary industries sector, namely the agricultural capability of the site and region, impacts on the surrounding apiary industry and the ability to extract any valuable mineral resources either on the site or in its immediate surrounds.

The letter noted that the proposed mitigation measures would 'provide for on-going agricultural activity on part of the site and on decommissioning of the facility, that the land capability of the site is expected to be similar to the existing capability'. It also noted that the proposed method of wrapping of waste before transporting it to landfill, non acceptance of apiary waste or pesticide and chemical containers, and the storage and sealing of leachate in sumps is expected to virtually eliminate the risk of contamination to bee hives. It said that the analysis in the Environmental Assessment showed that these risks were already very low without the mitigation measures.

A comment was made that if economically recoverable mineralisation was identified (which is a low probability), that mining operations and the waste facility could potentially co-exist.

The letter concluded by saying that the mitigation measures for the apiary industry appear to provide an exceptional level of protection against the food security risk, and that other councils in the region may need to consider similar measures.

A.6 Background, Context and Previous Issues Addressed by the Project

A.6.1 Background and Context

Recognising the pressing need to provide facilities to manage future waste and resource recovery requirements, the Proponent commenced planning and consulting with the community in 1996. After lengthy consideration of alternatives, the Proponent (supported by a joint venture with Cabonne Council) submitted a Development Application (DA) and accompanying Environmental Impact Statement (EIS) in 2005 for a regional resource reprocessing facility and waste landfill referred to as the 'Hub'. This infrastructure was planned to be the centrepiece of a comprehensive waste management plan with substantially increased resource recovery and a basis for future disposal of residual waste following completion of the landfill at the Ophir Road RRC in Orange.

The DA was assessed by the NSW Department of Planning and the Minister for Planning consented to the DA in January 2007.

The proposal was subsequently challenged in the Land and Environment Court (No. 10112 of 2007). During the Court hearing, the Proponent submitted a supplement to the EIS addressing each of the issues raised by the Court. In March 2008, the Court declined to grant development consent for the proposed waste facility. The decision of the Court prompted the Proponent to review the approach it has taken to sustainable waste management and commissioned an independent review, by sustainable waste strategy consultant Tony Wright (Wright Corporate Strategy 2008), to consider all aspects of the previous Hub and the Proponent's draft *Solid Waste and Resource Management Policy*. An independent study of alternative sites by Mr Robert Amaral (June 2008) was also commissioned.

Following the Wright study, the Proponent progressed development of the Orange Resource Recovery and Waste Management Strategy (Section A.3). The new strategy responds appropriately to issues raised in the independent review and in the Land and Environment Court Judgement with an integrated plan for greatly improved resource recovery and residual waste management with new operations at two separate sites.

A.6.2 Previous Issues Addressed by the Project

A.6.2.1 The 2005 development proposal

The 2005 proposal was based on the premise of progressively implementing resource recovery initiatives in line with the development of waste processing technologies. The intention was set out in the proposal that AWT processing would be the centrepiece of the scheme, to be supplemented by improved kerbside recycling and business waste recycling. Because few AWT facilities had been developed to a fully commercialised status, the Proponent was rightly cautious about specifying a technology type at the time of preparing the proposal in 2005.

The experience gained by other councils on three AWT projects in NSW regional areas, designed to divert municipal wastes from landfill (at Port Macquarie, Port Stephens and Coffs Harbour), has enabled the Proponent to develop a better understanding of the most suitable types of technologies for regional areas. The Proponent has also prepared a clear, sustainable *Resource Recovery and Waste*

Management Strategy for Orange that takes into account the findings of the Hub Land and Environment Court case and addresses the issues raised. The independent review of the previous waste management strategy by Wright Corporate Strategy (2008) provided further guidance in this regard.

A.6.2.2 Issues raised in the Land and Environment Court judgement

The Land and Environment Court judgement included four key reasons why the 2005 proposed development on the proposed site was not approved:

- ▶ Adverse effect on the long-term use of prime crop and pastureland zoned General Rural under the *Cabonne Local Environment Plan 1991*;
- ▶ Adverse effect on the sustained use of adjoining land for beekeeping. In particular, the Court viewed risk of American Foul Brood infection and a separate food safety risk as not consistent with the principles of ecologically sustainable development (ESD);
- ▶ Failure to include in the development proposal the critical Stage 2, which comprises construction of a proposed AWT facility. The AWT was described in broad concept terms and was to be the subject of a further approval when a suitable class of AWT had been determined. The Court reasoned that the omission of a specific and detailed Stage 2 proposal prevented approval of Stage 3, because Stage 3 includes *operation* of the AWT, which would clearly not have been approved by the Court in the absence of Stage 2; and
- ▶ The necessary off-site waste minimisation actions may not be able to be enforced by conditions placed on a development consent that is necessarily limited to the proposed site development, especially on the part of Cabonne Council (joint venture partner 2000-2009).

Each of these issues is addressed below, together with the Proponent's plans to resolve each issue as part of the new resource recovery and waste management strategy.

The issue raised during the Court Case regarding Cabonne Council and its ability to meet regional waste diversion targets is no longer relevant. Cabonne Council is no longer a joint venture partner in this project, therefore it is now free to choose whether to enter a contract to use the new facilities provided by the Proponent, to improve its resource recovery efforts, or to make other arrangements. This project provides defined capacity for regional access.

A.6.2.3 Issue 1. Long term use of prime crop and pasture land

The majority of the Euchareena Road Site is classified as Class 3 (prime agricultural land) under the NSW agricultural land classification system. This is consistent with the Class 1, 2, or 3 classification of much of the land within a 40 km radius of Orange.

The Proponent's response

The independent review of the Hub waste management proposal (referred to above) included review of potential waste management sites in a comprehensive assessment of the availability of sites other than the Euchareena Road Site on which to conduct resource recovery and waste disposal operations. Three broad possibilities were assessed. Each approach is described briefly below and covered more fully in Section E.3:

(a) Locate an alternative landfill and resource recovery site

An independent study of potential sites was undertaken by Robert Amaral (2008). The study confirmed the suitability and merit of the Euchareena Road Site for waste processing and disposal. In an effort to further test alternative site possibilities, in December 2008 the Proponent issued a public call for expressions of interest from the community for land that might be suitable for a waste management and resource recovery site. The Proponent deliberately avoided specifying restrictive criteria, with the objective of gaining the widest possible array of potential sites. The Proponent received only four responses to its public call as at the end of the expression of interest period. Despite the broad selection criteria published in the registration form, none of the sites proposed qualified as suitable.

(b) Consolidate all operations at Orange

The scope to conduct AWT operations and continue waste disposal at the Ophir Road RRC was raised as a possibility during the Court case. However, the landfill at the Ophir Road Site is approaching its ultimate capacity and with other resource recovery operations already taking up much of the above ground space at the site, insufficient space is available for an AWT facility. Moreover, odour modelling undertaken for this Environmental Assessment has indicated that the likely cumulative odour levels (with the existing sewage treatment plant) of locating a composting facility at this location may cause odour issues.

(c) Alternative regional landfill possibilities

A further alternative is to make use of an existing landfill already in operation at a regional centre such as Dubbo or Woodlawn, near Goulburn. This scheme is disadvantaged by the transport distances involved and the probable need for the landfill host to gain appropriate statutory approvals. The scheme would also leave the Proponent without any ability to control future costs and practices for waste disposal.

A.6.2.4 Issue 2. Mitigation of potential issues associated with beekeeping

The Court identified two separate risk categories relating to possible impacts of the proposal: a biosecurity risk arising from a disease, known as American Foul Brood (AFB) which can infest and destroy bee hive populations; and a food safety risk arising from the risk that honey bees from nearby apiaries may forage in the landfill for propolis, a natural material used in hive construction. It is suggested that bees from apiaries near landfill sites may choose resin-like waste substances, including chemicals, in lieu of natural plant resins.

The Court concluded that the food security risk is significant.

The Proponent's response

Various options are available to mitigate the potential food security risk to bee keeping. The most effective way to achieve this is by some form of pre-treating at-risk waste in Orange prior to transporting the waste to landfill. This would eliminate access to potential resin-like substances, in particular, honey remnants in honey jars placed in waste bins. Recyclables and items unsuitable for baling would be removed and the remaining wastes would be baled. Any honey contaminated wastes would be removed for disposal at Ophir Road RRC. The bales would be wrapped in heavy duty plastic bags during periods when bee hives are located in the vicinity of the Euchareena Road Site (refer Section B.2.4.2).

This would prevent any bees in the vicinity of the Euchareena Road Site from accessing discarded honey jars. Material unsuitable for baling would comprise bulky items (such as from construction and demolition

and commercial and industrial waste) with limited impact on food quality and would be disposed of at the Euchareena Road RRC under controlled conditions and covered without delay.

A.6.2.5 Issue 3. Definitive basis for assessment of resource recovery facilities

The original DA, as approved by the Minister for Planning, did not include a proposal for a specific waste technology facility, as this was to be the subject of a further application when a suitable class of AWT had been identified.

The Proponent's response

In its 2005 EIS and 2007 EIS Supplement, the Proponent committed to waste processing using an AWT facility. However, the final determination of which type of AWT to adopt was postponed pending detailed consideration of the relative merits and practice difficulties with various AWT types which at the time were still unproven in Australia. The Proponent is now in a position to nominate the class of proven AWT scheme to be adopted. The selected scheme is enclosed tunnel composting, which would treat feedstock gained from a new food waste/garden organics kerbside collection service as well as source-separated food waste from the business sector.

This enclosed composting process would be undertaken at the proposed Euchareena Road RRC.

A.6.2.6 Issue 4. Enforcement of key off-site waste minimisation strategy initiatives

The Court reasoned that it was not feasible to provide conditions for off-site resource recovery/ waste minimisation initiatives, as the original DA referred only to the Euchareena Road Site.

The Proponent's response

The Proponent requests assessment of the Project presented in this document on the basis that it provides the infrastructure needed to implement its resource recovery and waste management strategy. The project incorporates activities to be developed at both the Ophir Road RRC and the proposed Euchareena Road RRC. All new project components are sufficiently defined to be considered for approval. Thus approval conditions could be framed to cover the key infrastructure needed to implement the Orange City *Resource Recovery and Waste Management Strategy*.