ADDENDUM DEVELOPMENT ASSESSMENT REPORT
BEGA VALLEY SHIRE CENTRAL WASTE FACILITY

PREPARED FOR
BEGA VALLEY SHIRE COUNCIL

JULY 2011

Report Title:	*Addendum Development Assessment Report*
Project:	*Bega Valley Shire Central Waste Facility*
Client:	*Bega Valley Shire Council*
Report Ref.:	*209202_REO_002.docx*
Status:	*Final*
Issued:	*4 July 2011*

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The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

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Executive Summary

Bega Valley Shire Council (BVSC) is in receipt of a Development Application (DA) for the establishment and use of a Waste Management Facility, known as the Central Waste Facility (CWF) on Lot 3 DP 592206, Wanatta Lane, Wolumla.

An assessment report titled *Development Assessment Report: Bega Valley Shire Central Waste Facility* (hereon referred to as the original assessment report) prepared by Geolyse dated January 2011, was put to the Southern Joint Regional Planning Panel's (JRPP) meeting of 14 March 2011. The Panel deferred determination of the DA, pending the provision of further information. This report is an addendum report to the original assessment report and provides the additional information requested by the Panel.

Specifically, this report provides:

- Further details of the Wanatta Lane upgrade its potential environmental impacts and Council's process for determination and funding.
- Details of necessary upgrades needed for electricity and likely environmental impacts if any.
- A detailed assessment of the:
  - Odour
  - Leachate
  - Noise
  - Air quality and micro-climate
  - Ground & surface water
  - And mitigation and management issues required to ameliorate/mitigate
- Details of the site selection process and alternate site identification used.
- Summary of the issues identified at the Public Forum held in November 2010 and issues raised during the addresses to the Joint Regional Planning Panel meeting on 14 March 2011 and proposed mitigation measures proposed to ameliorate those issues identified.
- Further details of the social and economic impacts of the development to assist assessment of suitability of the site
- Consideration of statutory planning matters that have become relevant following the original assessment report.

Following the above assessments, the report concludes the following. The proposed development is permissible with consent in the 1(a) zone under *Bega Valley Local Environmental Plan 2002* (Bega LEP) and is not inconsistent with the zone objectives. The development is consistent with the provisions of Bega LEP, *Lower South Coast Regional Environmental Plan No. 2*, SEPP 33, SEPP 44, SEPP 55, Infrastructure SEPP and DCP No. 7. The development is consistent with the provisions of the *Draft Bega Valley LEP 2010*. There are no planning agreements entered into, or any draft planning agreements offered by the developer. No provision of the Regulations (specified for the purpose of s.79C(1)(a)(iv) of the Act) are applicable to this development.

As outlined throughout this report and the original assessment report, the development (operating with the recommended mitigation measures) is not expected to result in any significant adverse impacts.

The submissions made to the DA have been considered and clarification and/or alterations made to the development to address these concerns where relevant.

The development is consistent with Council's 2020 Vision for Waste and is thus considered to be in the interest of the public as a whole. It is therefore recommended that the DA be approved, subject to the conditions as outlined in **Appendix E**.

Introduction

1.1 INTRODUCTION

Geolyse Pty Ltd has been commissioned by the Bega Valley Shire Council (BVSC) to undertake an assessment of the Development Application (DA) for the Bega Valley Shire Central Waste Facility (CWF). As Council is the applicant for this DA, Council sought the services of an independent consultant to assess and make a recommendation for determination of the application.

This report is an addendum report to the original *Development Assessment Report: Bega Valley Shire Central Waste Facility* (hereon referred to as the original assessment report) prepared by Geolyse dated January 2011.

1.2 BACKGROUND

The original assessment report was put to the Southern Joint Regional Planning Panel's (JRPP) meeting of 14 March 2011. The resolution of the JRPP meeting was:

> *that Development Application 2009.0563 for a Central Waste Facility at Lot 3 Wanatta Lane, Frogs Hollow be deferred for a further assessment report to address the following issues:*
>
> *A) 1 Details of the Wanatta Lane upgrade its potential environmental impacts and Council's process for determination and funding.*
>
> *2. Details of necessary upgrades needed for electricity and likely environmental impacts if any.*
>
> *3. Detailed assessment of the:*
> - *Odour*
> - *Leachate*
> - *Noise*
> - *Air quality and micro-climate*
> - *Ground & surface water*
>
> *And mitigation and management issues required to ameliorate/mitigate*
>
> *4. Details of the site selection process and alternate site identification used.*
>
> *5. Summary of the issues identified at the Public Forum held in November 2010 and proposed mitigation measures proposed to ameliorate those issues identified.*
>
> *6. Further details of the social and economic impacts of the development to assist assessment of suitability of the site*
>
> *B) The report be presented to the Joint Regional Planning Panel as soon as practical but no later than three months from today.*

This addendum report has been prepared *inter alia* to address the matters from the above resolution.

A meeting has been scheduled for the JRPP to consider this matter on 27 July 2011.

1.3 SCOPE AND FORMAT OF THIS REPORT

1.3.1 SCOPE

Since the original assessment report was prepared the *Draft Bega Valley Local Environmental Plan 2010* (Draft BV LEP) has been placed on public exhibition. As the draft instrument has been the subject of public consultation, it becomes a matter for consideration under Section 79C(1)(a)(ii) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Therefore this addendum report provides consideration of the proposed development against the draft LEP.

This report also addresses the matters from the JRPP's March 2011 meeting resolution as outlined in the previous section of this report.

1.3.2 FORMAT

This addendum report is provided in the following format:

- **Section 2** provides details of the Wanatta Lane upgrade, its potential environmental impacts and Council's process for determination and funding.
- **Section 3** provides details of the necessary upgrades needed for electricity and likely environmental impacts if any.
- **Section 4** provides a detailed assessment of the odour, leachate, noise, air quality and micro-climate, ground and surface water, and mitigation and management issues required to ameliorate/mitigate.
- **Section 5** provides details of the site selection process and alternate site identification used.
- **Section 6** provides a summary of the issued identified as the Public Forum held in November 2010 and the JRPP meeting of 14 March 2011, and other late submissions received,.
- **Section 7** provides further details of the social and economic impact of the development to assist assessment of the suitability of the site.
- **Section 8** provides an assessment of the proposed development against relevant additional legislative matters;
- **Section 9** provides a conclusion to the assessment of the DA and provides a recommendation for determination.

Wanatta Lane Upgrade

2.1 INTRODUCTION

The Southern JRPP meeting of 14 March 2011 resolved that the following be provided:

> *Details of the Wanatta Lane upgrade its potential environmental impacts and Council's process for determination and funding.*

This section of the report addresses this part of the resolution. Specifically it provides details on the upgrading, the potential environmental impacts as outlined in the REF, and Council's process for determination of the activity, and details of funding.

2.2 BACKGROUND

As outlined in Section 1.2.3.1 of the original assessment report, the upgrade of Wanatta Lane between the subject site and the Princes Highway, proposed to facilitate the proposed CWF, is required to be considered under Part 5 of the EP&A Act.

Consequentially a *Review of Environmental Factors: Proposed Road Widening Wanatta Lane, Wolumla* was prepared by Eco Logical Australia Pty Ltd. Council, as the determining authority for the upgrade, considered the upgrade (refer **Appendix A**) and resolved at it's meeting of 3 May 2011 to determine to approve the upgrade (refer **Appendix B**).

The following provides details of the Wanatta Lane upgrade, its potential environmental impacts, and Council's process for determination and funding.

2.3 PROPOSED ROAD WORKS

Wanatta Lane, from its intersection with the Princes Highway, has been constructed to a 6.4m wide gravel standard for a distance of approximately 2.3kms. From the end of the gravel section, the road has been constructed and sealed to its intersection with Candelo Wolumla Road.

The current constructed alignment of the road generally follows the nominated road reserve. However, there are sections of the road which encroach onto adjoining privately owned lands.

The proposed upgrade would involve the realignment, widening and reconstruction of the existing gravel road to a 6.4m wide sealed standard with 1m wide shoulders for a distance of 1.61kms from its intersection with the Princes Highway.

The new section of road would encompass a new intersection treatment to service the proposed Central Waste Facility and would end approximately 170m to the south of the proposed new intersection. The proposed new intersection would be located approximately 85m to the south of the existing gate accessing the site of the Central Waste Facility.

The new location of the intersection has been chosen to optimise available sight distance to vehicles accessing the proposed Central Waste Facility.

The upgraded road would be constructed to a design standard of 60kph with suitable drainage.

The proposal would result in removal of predominantly Forest Red Gum (*Eucalyptus tereticornis*) of ranging age from regrowth to mature trees of greater than 75cm diameter at breast height (DBH). Total Forest Red Gums to be removed is in the order of 115 trees (approximately half the small regrowth trees), seven (7) of these are considered large trees (greater than 75cm DBH), of which all are hollow bearing trees.

Soil and water management controls would be installed prior to earthworks commencing.

The works would be undertaken over a 9 week period between the hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday.

Normal road construction plant including bulldozer, scraper, grader, excavator, dump trucks, water tanker and roller would be used.

2.4 POTENTIAL ENVIRONMENTAL IMPACTS

2.4.1 INTRODUCTION

The following provides a summary of the potential environmental impacts of the activity as outlined by the REF.

2.4.2 AIR

2.4.2.1 Dust

Dust will be temporarily created during some of the construction activities, although dust will generally be restricted to the immediate area, and is expected to have a negligible impact beyond the study area.

The proposal will result in positive outcomes with regard to dust, with the proposed sealing of Wanatta Lane road surface significantly reducing the dust emanating from 1.6 km of Wanatta Lane.

2.4.2.2 Odour & Other Particulates

Vehicle movements in association with the proposal are likely to result in some odour and exhaust emissions. However neither odour nor the exhaust emissions associated with the proposal will result in a significant deterioration of air conditions within the study area and surrounds during the construction period.

The impacts from odour and exhaust emissions associated with the proposal are negligible when compared to the emissions associated with other activities in the locality i.e. agriculture and the use of major roads such as the Princes Highway.

2.4.2.3 Summary

Under these circumstances, the impacts on air quality associated within the proposal will be negligible, and in relation to dust, will be positive in the medium to long-term.

2.4.2.4 Mitigation Measures

No mitigation measures were deemed necessary by the REF.

Water Quality

The potential impacts of the proposed works on water quality relate to pollution of the surrounding area from runoff from the study area during the construction period, the generation of waste, pollution from petrochemicals or the road medium which may then enter local watercourse, and from potential alterations to the local soil and drainage structure.

2.4.2.5 Erosion & Sedimentation

Adverse drainage and erosion impacts are not anticipated in association with the proposal because the upgraded section of Wanatta Lane follows a natural ridgeline underlain with hard granite derived soils. There may be increased runoff in the drainage depressions, however, the site is naturally drained via ephemeral gullies and because the surrounding area is dominated by grasslands the majority of the sediment in the runoff would be deposited in the grasslands to which the proposed drainage structures will discharge.

The road upgrade proposes to install drainage culverts to appropriate standards and implement sediment and erosion control measures in preparation for their permanent installation. Consequently, the impacts associated with both the construction and operation phases are considered minimal and no ongoing impacts associated with runoff are expected as the culvert entry and exit points will naturally revegetate in the short term.

2.4.2.6 Waste Disposal

Portable toilets will be provided and maintained on site during the proposed activities and the sanitary waste would be properly disposed of by a licensed contractor to the Merimbula or Bega sewage treatment plants.

2.4.2.7 Chemical and Litter Pollution

Chemical and general litter pollution risks will be adequately reduced using appropriate management practices such as storage site bunding, access to appropriate materials in the event of any spills, and the provision of appropriate bins for the collection of works related waste and food waste. Waste will be disposed of at the Merimbula Recycling and Waste Depot.

2.4.2.8 Summary

The road drainage built into the road design, the sediment controls during and post construction, and the waste collection procedures that will be required during construction, will appropriately mitigate against potential water quality impacts. Consequently, the potential impacts on water quality associated with the proposal are expected to be negligible.

Furthermore, the sealing of 1.6 km of Wanatta Lane is likely to reduce adverse impacts on receiving waters in the medium to long-term, by reducing the sediment and associated turbidity during rain, and particularly storm events.

2.4.2.9 Mitigation Measures

The following measures have been incorporated into the proposal to limit potential adverse impacts on drainage and water quality. They include:

- All works are to be undertaken in accordance with a CEMP specific to the road upgrade.
- Install temporary erosion, sediment and necessary water pollution source control measures to mitigate impacts during the construction phase in accordance with The Blue Book volumes 1 and 2.
- Construct road using appropriate transverse drainage structures as per the proposed design.
- Works will not be scheduled when heavy rainfall is forecast.
- No works involving soil disturbance shall take place during heavy rainfall periods, other than work necessary to stabilise the site.
- General solid waste is to be collected in appropriate bins and disposed of at the Merimbula Recycling and Waste Depot.
- On site portable toilets are to be maintained and the waste from them is to be collected and properly disposed of by a licensed contractor.

- Minimize the disturbance to groundcover vegetation within the study area outside of the proposed road footprint.
- Disturbed soil areas adjacent to the study site should be rehabilitated by sowing a sterile cover crop.
- Any fuel, other petrochemicals or potentially polluting fluids must be stored within a bunded area during the construction phase of the proposal.

2.4.3 ENERGY AND CLIMATE CHANGE

2.4.3.1 Impacts

During the implementation of the proposal energy consumption will occur in association with the use of vehicles and machinery. This energy use is considered to be negligible in the context of the energy use elsewhere in the locality.

Whilst the overall level of impact on energy consumption and climate change associated with the proposal is considered to be negligible it can nonetheless be further mitigated by implementing the mitigation measures identified below.

2.4.3.2 Mitigation Measures

To minimise the energy consumption and emissions produced during the implementation of the proposal, energy efficiency should be considered at all times. As such vehicles and machinery should be kept in good working order and used in an efficient manner.

2.4.4 FLORA & FAUNA

2.4.4.1 Flora & Vegetation Communities

Existing Environment

The study area supports the Far South Coast Grassy Woodland and areas of Exotic Grassland.

The Far South Coast Grassy Woodland comprises a woodland or open forest characterised within the study area by a canopy of Forest Red Gum (*Eucalyptus tereticornis*) and to a lesser extent Red Box (*Eucalyptus polyanthemos* subsp. *Vestita*), Rough-barked Apple (*Angophora floribunda*), and River Peppermint (*Eucalyptus elata*). The shrub layer is generally absent and the groundcover is generally exotic, although some patches dominated by native species remain in places.

Despite the level of disturbance, much of the vegetation within the study area comprises the Lowland Grassy Woodland in the South East Corner Bioregion Endangered Ecological Community (EEC) (Lowland Grassy Woodland), which is listed on the *Threatened Species Conservation Act 1995* (TSC Act*)*. The Lowland Grassy Woodland replaced the Bega Dry Grass Forest and Candelo Dry Grass Forest EECs.

The study area does not support any other endangered ecological communities listed on either the TSC Act or EPBC Act.

No flora species of conservation significance were detected within the study area or immediate surrounds despite targeted searches during the survey period, nor during the survey undertaken by Hayes Environmental (2008). No threatened flora species are expected to occur within the study area.

Impacts

The proposal would remove most of the Far South Coast Grassy Woodland on the northern side of the existing road reserve. This comprises predominantly Forest Red Gum (E*ucalyptus tereticornis*) of ranging age from regrowth to mature trees of greater than 75cm diameter at breast height (DBH). Total Forest Red Gums to be removed is in the order of 115 trees (approximately half the small regrowth trees), seven (7) of these are considered large trees (greater than 75cm DBH), of which all are hollow bearing trees.

The proposed action will result in the loss of approximately 0.25 ha of the Lowland Grassy Woodland EEC in relatively good condition. Similar condition EEC was identified adjacent to the site to the north. The extent of the local occurrence of EEC is not fully known, however Tozer et al. (2006) estimates 900-1000 ha of the Lowland Grassy Woodland EEC in the Toothdale/Wolumla/Frogs hollow area. As such the Lowland Grassy woodland EEC to be removed by the proposed works comprises a very small part (less than 0.028%) of the local occurrence of the community.

The assessments determined that the study area does not support a unique assemblage of characteristic flora species of the Lowland Grassy Woodland EEC that does not occur elsewhere within the locality.

The study area is highly fragmented and does not provide connectivity between more intact habitats. The proposed works will not result in the fragmentation or isolation of the local occurrence of the Lowland Grassy Woodland EEC as only a very small area within the much more extensive local occurrence will be affected and the community will continue to occur more extensively to the north, west and east of the study area.

Mitigation Measures

The following mitigation measures are designed to limit the impact on vegetation communities resulting from the proposal:

- The impacts on the Lowland Grassy Woodland EEC will be offset by the rehabilitation and recovery efforts proposed along the eastern boundary and around the CWF site (see Figure 4 in AECOM 2009) and also within the large woodland remnant in the south western parts of the site.
- Local provenance trees characteristic of the Lowland Grassy Woodland will be planted on either side of the upgraded Wanatta Lane and in any areas where there are currently gaps in canopy connectivity.
- Trees within the study area and vicinity that will not be removed are to be marked with bright flagging tape and temporarily fenced where necessary to ensure that these trees are appropriately protected during the construction phase of the proposal.
- The limits of the construction site will be clearly marked (for example, using temporary fencing) to ensure site disturbance occurs only within the designated works areas and is not unnecessarily extended i.e. into the Lowland Grassy Woodland that occurs to the north of the study area.
- An induction plan for workers will be developed and implemented to inform them of appropriate safeguards to limit impacts on vegetation to be retained within or beyond the limit of the proposed works.
- Trees will be removed so as to limit and or avoid damage to vegetation to be retained, particularly hollow-bearing trees.
- Tree and vegetation removal will be conducted by experienced operators only.

2.4.4.2 Fauna

Existing Environment

The fauna habitats present in the study area and immediate surrounds are those typically associated with grazing lands and narrow strips of remnant woodland within road reserves in the Bega Valley. As such the fauna habitats within the study area and surrounds are relatively limited, given their fragmentation, lack of understorey, and relatively poor connectivity to less modified areas of bushland. Notwithstanding these limitations, the study area does continue to support fauna habitats of value, in particular seven hollow-bearing trees, some of which are large old-growth trees with multiple and medium to large hollows.

The trees within the study area also provide foraging habitats, particularly for species that forage on the nectar resources. These nectar resources also attract insects which subsequently attract insect eating birds and microchiropteran bats. A diverse range of microchiropteran bats were recorded foraging within the study area during the survey period, including the threatened East-coast Freetail Bat *Micronomus norfolkensis* and the Eastern Falsistrelle *Falsistrellus tasmaniensis*. The study area and surrounds also include winter-flowering eucalypts which provide a valuable seasonal foraging resource, including for arboreal mammals such as the Sugar Glider *Petaurus breviceps* and Common Brushtail Possum *Trichosurus vulpecular,* both of which were recorded within the study area during the survey period.

The study area does not support any significant water or rock habitats. The habitats within the study area continue and are more extensive on the lands to the immediate north. The hollow bearing trees within the study area provide some potential breeding and roosting habitat for a range of mammals and birds. During the survey period these resources were being utilised by the Sugar Glider, Common Brushtail Possum and birds such as the Galah, Musk Lorikeet and Noisy Miner.

These species were also using hollow-bearing trees which occur to the north of the study area in the remnant woodland that stretches north through grazing lands along a tributary of Wolumla Creek. Some highly mobile fauna species of conservation significance, and in particular threatened microchiropteran bats, may occur in the study area from time to time. However, given the small size of the study area and the nature of the habitats there, the study area is not expected to provide any critical habitat resources for any fauna species of conservation significance.

Impacts

A relatively broad range of fauna species may potentially utilise the foraging, breeding and roosting habitats in the study area. However the extent of similar and superior potential habitats in the locality, relative to that in the study area, suggests that the habitats in the study area are unlikely to be of particular importance to most species. Whilst threatened microchiropteran bats were recorded foraging within the study area during the survey period, no evidence of any threatened fauna species utilising the hollows in the study area was recorded during the survey period despite targeted survey. This is consistent with the results of Hayes Environmental (2008)

Given that the hollow-bearing trees within the study area are relatively isolated and exposed, the only threatened species that are likely to potentially use this hollow resource are microchiropteran bats and smaller hollow dependent birds such as the Little Lorikeet *Glossopsitta pusilla*. Larger hollow dependent threatened birds such as the large forest owls, Glossy Black Cockatoo and Gang-gang Cockatoo are highly unlikely to use the hollows within the study area given their exposed position, and the abundance of superior habitat in the larger forested areas that remain within the locality. Furthermore it is considered unlikely that species such as the Little Lorikeet would utilise the hollows in the study area given the species rarity in the locality. It is more likely that the hollows within the study area would be used by more common native fauna species, such as the Galahs, Noisy Miners, Sugar Gliders and Common Brushtail Possums which were observed using the hollows within the study area and surrounds during the survey period. Similarly, the hollows within the study area are more likely to be utilised by common microchiropteran bat species, as observed by AECOM (2009) in the CWF site.

Whilst it is possible that threatened microchiropteran bats may roost or even breed within the hollows within the study area, no evidence of any roosting activity was observed during the survey period or in 2008 despite targeted survey. In any case, the potential roosting or breeding habitat within the study area comprises only a negligible amount of the potential habitat available to these species in the locality.

The proposal will result in the removal of a relatively small area of potential foraging habitat and substrate for a range of fauna species including some highly mobile threatened species such as the Grey-headed Flying-fox, Gang-gang Cockatoo, and microchiropteran bats. However the extent of the foraging resources to be removed or modified is insignificant in comparison to their extent elsewhere in the locality.

The proposal will not substantially fragment or isolate any areas of potential habitat for fauna species. The study area occurs in an already highly fragmented landscape where connectivity between patches of remnant vegetation is relatively poor. As such, only highly mobile species capable of flying or otherwise of traversing open areas of grassland, are likely to move through the study area and habitats immediately adjacent. The open woodland to the north of the study area will not be affected by the action proposed, and this area will continue to provide a “stepping stone” for species moving between the larger areas of intact bushland to the east and west.

Whilst the proposal will further reduce connectivity between habitats in the short-term, this will be offset by the long-term benefits of the proposed woodland management and recovery affects associated with the proposed CWF, and the proposed tree planting along the upgraded Wanatta Lane. The impacts on connectivity will be further mitigated by the retention of the vast majority of the existing trees along the southern side of Wanatta Lane.

Summary

The REF concluded that the proposal is highly unlikely to impose significant impacts on fauna habitats, given the isolation of the study area, the likely predominant use of the habitats by common native fauna species, and the extent of similar and superior habitats in areas immediately to the north and elsewhere in the locality.

Under these circumstances, the impacts of the proposal on fauna habitats are considered to be relatively minor and acceptable.

Mitigation Measures

The proposal is anticipated to have a relatively minor impact on fauna and their habitats. However, a number of safeguards have been incorporated into the proposal. These include:

- Planting local provenance trees characteristic of the Lowland Grassy Woodland on either side of the upgraded Wanatta Lane and in areas where there are gaps in canopy connectivity.
- Undertaking the rehabilitation and recovery efforts proposed along the eastern boundary and adjacent to the CWF site (see Figure 4 in AECOM 2009) and also within the large woodland remnant in the south-western parts of the site.
- Clearly marking the trees within the study area that are to be retained with bright flagging tape and temporary fencing to ensure that these trees are protected from damage.
- Clearly marking/delineating the activity areas at all sites (for example, using temporary fencing) to ensure site disturbance occurs only within the designated works areas and is not unnecessarily extended.
- Implementing safeguards to minimize the risk of water quality impacts as identified in Section 4.2.1.
- Developing an induction plan for workers to inform them of appropriate safeguards to limit impacts on vegetation and trees to be retained.
- Ensuring that tree and vegetation removal is conducted by experienced operators only.

- Undertaking hollow-bearing tree removal during the winter to reduce the impacts during the breeding season for most fauna species.
- Dismantle large trees in sections and/or use a machine with a grab implement to lower the trunk and limbs to the ground to reduce the chance of mortality on any resident fauna.
- A licensed fauna handler/caretaker will be available during the removal of the large or hollow bearing trees to inspect all parts of these trees after felling to see if previously non-visible hollows are present and to recover any fauna disturbed or injured as a result of these activities.
- Cease work immediately in the vicinity until further consideration if any threatened fauna species are encountered during the proposed works. A DECCW officer is to be consulted so protection measures can be applied as required.
- Large trees requiring felling will be left in sections within an appropriate area on adjacent Council owned land for wildlife habitat.

2.4.4.3 Section 5A Assessment

The REF concluded that the proposal is unlikely to have a significant effect on threatened species, populations or ecological communities or their habitats pursuant to Section 5A of the *NSW Environmental Planning and Assessment Act 1979.*

A Species Impact Statement is not required for the proposal.

2.4.5 CULTURAL HERITAGE

2.4.5.1 Impacts

The REF process involved archaeological investigations over the length of the section of road to be upgraded by a suitably qualified and experienced consultancy On Site Cultural Heritage Management.

The basis of the investigation stemmed from the cultural heritage assessment for the CWF which highlighted the potential for items of aboriginal significance (scarred trees) to be present within the existing road reserve.

The investigations included a desktop assessment (Aboriginal Heritage Information Management System) and field survey. A representative of the Bega Local Aboriginal Land Council (BLALC) was present during the field survey.

The Report concludes that there were no objects or areas of aboriginal significance identified and as such, there were no cultural heritage constraints over the project.

2.4.5.2 Mitigation Measures

If any Aboriginal or European heritage sites are discovered during the proposed works, they will be reported to the Zone Archaeologist of DECCW, the Bega LALC and the Heritage Council as required. Works will cease in the vicinity of the item pending their consideration. The sites will be assessed for significance, and protection measures will be instituted if required.

2.4.6 NOISE

2.4.6.1 Impacts

The proposal will result in a relatively minor amount of noise and vibration generation. Given the land use of the surrounding area, and the linear nature of the activity, the noise levels generated are unlikely to cause annoyance. Passing motorists will be temporarily exposed to these impacts for the duration of the works. The nearest house is located some 300 m from the proposed works on a rural property along the Princes Highway where there are four other small acreage properties with houses. Otherwise the nearest concentration of houses is further along Wanatta Lane to the southwest at Annabelle Crescent more than 1 km from the study area.

The existing background noise is generally typical of a rural area and is associated predominantly with natural noise sources. However the study area already includes elevated noise levels in association with traffic noise from the Princes Highway. There will be temporary increases in noise emissions during construction operations but the predicted increases were assessed against intrusiveness and amenity criterion at several locations and all complied with the noise criteria and are considered acceptable (Heggies 2007). The temporary nature of works, their short duration, and the time restrictions for construction will ensure that the inconvenience associated with the noise and vibration generated by the proposal will be minimal.

The impacts of the proposal on noise during the construction phase will be minimal and temporary, and in the long term will likely improve the situation.

2.4.6.2 Mitigation Measures

The following mitigation measures are designed to limit the impact of noise from the proposal:

- Noise will be controlled by legislative devices specified in the then Department of Environment and Climate Change now Office of the Environment and Heritage Industrial Noise Policy (2000) and the Construction Noise Guideline (2009).
- Construction will be undertaken during specified hours (Monday to Friday between 7am and 6pm and on Saturdays from 8am to 1pm, and not on Sundays or public holidays) and for the duration of approximately nine weeks.

2.4.7 TRAFFIC

2.4.7.1 Impacts

There will be some increase in traffic movements in the area whilst the work is being undertaken in association with the nine week construction phase. However, the construction vehicle and machinery movements will be restricted to the hours of construction and all traffic will be directed by a Traffic Management Plan to ensure that traffic is managed safely and public access is maintained.

The impacts of the proposal on traffic during the construction phase will be minimal and temporary, and in the long term will likely improve the situation for existing traffic.

2.4.7.2 Mitigation Measures

The following mitigation measures are designed to limit the impact of traffic from the proposal:

- Traffic movements associated with the proposal will be kept to the minimum necessary to efficiently and safely implement the proposal.
- Ensure that a best practice Traffic Management Plan is prepared prior to the proposal activities commencing to ensure that all proposal related and public traffic on Wanatta Lane and at the junction with the Princes Highway is safely managed and that residents with local properties continue to have road access during the implementation of the proposal.

2.4.8 VISUAL IMPACTS

2.4.8.1 Impacts

The study area and surrounds are a rural landscape with scenic values typical of much of the Bega Valley and other rural areas on the far south coast. Visual amenity could be compromised by untidy work practices, cleared vegetation, haphazard storage of machinery and areas of bare earth. The tree removal on the northern side of Wanatta Lane in particular will alter the visual landscape of the study area, but this is expected to have minimal impacts given that open grassy wooded areas are located nearby. In addition, the tree and vegetation retention and planting on the southern alignment, and the general rehabilitation measures associated with the proposal will, over the long term, improve canopy connectivity and thus visual amenity.

2.4.8.2 Mitigation Measures

The following mitigation measures are designed to limit visual impacts from the proposal:

- Minimise visual impacts by maintaining tidy work practices, respreading cleared vegetation, and stabilising / revegetating areas of bare earth.
- Wherever possible, retain trees on the southern side of the road alignment and implement a program of planting trees in the gaps along the southern corridor.

2.4.9 CUMULATIVE IMPACTS

The potential negative impacts identified by this report are unlikely to have significant effects at the local or regional scale since they will be minor and site-specific. The small-scale potential impacts are not envisaged to have substantial adverse effects on the environment including threatened and migratory species, cultural heritage, microclimate, greenhouse gas emissions, air, water, or soils or the community, as work practices will be implemented to protect such values.

2.4.10 CONCLUSION

The REF concluded

> *that the identified impacts of the proposal will not have a significant adverse impact on the environment, provided that the mitigation measures set out in Section 6 are adopted, and the proposal is implemented as described in Section 1.2* (Eco Logical Australia Pty Ltd 2011:33).

2.5 COUNCIL REPORT

2.5.1 INTRODUCTION

The following provides a summary of the report prepared by Council's planning staff on the proposed activity. The full report is attached at **Appendix A**.

2.5.2 LEGISLATIVE REQUIREMENTS

Development consent under Part 4 of the Act is not required as Clause 80 of Bega Valley Local Environmental Plan 2002 exempts Council from the need to obtain development consent for infrastructure works.

Whilst development consent is not required, the proposed works would constitute an activity as defined by Part 5 of the EP&A Act.

Council is the proponent for the project and is also the determining Authority under Part 5 of the EP&A Act. As the determining authority, Council must consider, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

Under the provisions of the EP&A Act, Council shall not carry out or grant approval in relation to an activity that is likely to have a significant impact on the environment or threatened species unless the activity has been subject to the preparation and consideration of an Environmental Impact Statement (EIS).

In assessing the requirements of Part 5 of the Act, the full length of the section of road to be upgraded was subject to extensive field investigation and reporting culminating in the preparation of a detailed Review of Environmental Factors (REF) by consultants Eco Logical.

The report addresses all relevant legislative requirements and key environmental, cultural and social values and risks. It provides an assessment of the significance of the impacts of the project on identified values and recommends safe guards to avoid or minimise likely impacts.

The report concludes that the project would not have a significant adverse impact on the environment provided that recommended mitigation measures are adopted and implemented as part of the works.

Council's planning and environmental staff assessed the content of the report and concurs with its findings. Accordingly, a higher level of assessment (EIS) is not considered warranted.

2.5.3 CONCLUSIONS

The Council report concludes that the REF has identified a number of heads of consideration and potential environmental impacts associated with the scope of the proposed works and as necessary, identified appropriate mitigation measures which should be employed as part of the works.

The mitigation measures recommended by the REF together with those recommended by Council's assessment staff should be adopted as part of any subsequent works program for the project.

The report recommended:

1. That the upgrade of the nominated section of Wanatta Lane be approved in accordance with the provisions of Part 5 of the Environmental Planning and 430 Assessment Act 1979.

2. The project being carried out in accordance with the Review of Environmental factors entitled "Proposed Road Widening Wanatta Lane, Wolumla" dated 28 February 2011 inclusive of all the mitigation measures as detailed in Section 4 of the report.

3. The scope of the proposed works shall be implemented through the preparation and adoption of a Construction Environmental Management Plan the form and content of which, shall be approved by Council's Group Manager Planning and Environment prior to works commencing.

4. Erosion and sedimentation controls shall be designed and implemented prior to site works commencing in accordance with the NSW Government and Landcom, publication "*Managing Urban Stormwater – Soils and Construction, Volume 1*" (4th Edition 2004) and Volume 2C and D (Gravel and Sealed Roads, DECCW 2008). Site disturbance must not commence until a fully detailed erosion and sediment control plan has been lodged and endorsed by Council's Group Manager Planning and Environment.

5. During construction works, dust emissions must be minimised so as not to result in a nuisance to nearby residents or result in a pollution incident. Adequate dust controls measures must be provided to the site prior to the works commencing and the measures and practices must be maintained throughout the works program to the satisfaction of Council's Group Manager Planning and Environment.

6. The burning of vegetation felled or removed as part of the programmed work is prohibited. Tree head or crowns, scrub and stumps should be mulched or chipped and stockpiled on-site to be used in soil erosion and sediment control management.

7. Where possible, topsoil must be stripped only from those areas within the designated work site and must be stockpiled for later use in the rehabilitation and landscaping of the disturbed areas.

8. Stockpiles (topsoil, subsoil, sand, or otherwise) must be:
   - Located at least 2 metres from any hazard areas, including surfaces with grades greater than 1.5%, zones of concentrated flow, driveways, swales or standing vegetation;
   - Protected from upslope stormwater surface flows;
   - Provided with sediment filters downslope and;
   - Provided with a protective cover that reduces the C-factor on bare surface areas to 0.15 or less where they are likely to be worked for more than 20 working days.

9. Construction noise shall, at all times, meet the requirements of the *NSW Industrial Noise Policy* and the *NSW Interim Construction Noise Guideline* (DECCW 2009).

10. A detailed site rehabilitation plan incorporating a planting schedule and design and weed management practices shall be prepared and submitted to Council's Group Manager Planning and Environment for assessment and endorsement prior to site works commencing. Vegetation rehabilitation and weed management and migration shall be in accordance with industry best practice and is to be included in the Construction Environmental Management Plan.

11. Machinery and vehicles used in construction works must be washed before and after on-site access to reduce the introduction and spread of weeds and pathogens. Wash-downs must occur at appropriate facilities.

12. No later than 14 days prior to the commencement of site works, all adjoining and adjacent land owners shall be formally notified of the date of commencement, the likely time frame for the completion of works and contact details of relevant Council staff overseeing the works.

13. The Review of Environmental Factors be placed on Council's website for public information prior to and extending over the duration of the works.

14. Any works within the Princes Highway road reserve shall be to the requirements and satisfaction of the Roads and Traffic Authority.

2.5.4 COUNCILS ACTIONS IN ASSESSING THE ACTIVITY

The following provides a summary of the actions undertaken by Council in assessing the activity:

- In February 2011, Council received a review of environmental factors entitled *Review of Environmental Factors, Proposed Road Widening Wanatta Lane, Wolumla*, dated 28 February 2011.
- The Report was prepared by **E**co Logical Australia and was commissioned by the Bega Valley Shire Council for the purpose of assessing the potential environmental impacts associated with a required upgrade of a 1.61 kilometre section of Wanatta Lane Wolumla. The upgrade was considered warranted by Council in providing a suitable standard of vehicle access to the proposed central waste facility which was concurrently under consideration by a Joint Regional Planning Panel.
- It was considered that the works associated with the road upgrade constituted an 'activity' as defined by Part 5 of the EP&A Act and as such required an assessment that same part by Council. This was confirmed by legal advice received from Council's Solicitor.
- The REF was supplemented by engineering design plans which illustrate the re-alignment of the existing road formation, as necessary, to ensure that the formation is contained wholly within the designated road reserve and a general upgrade of the existing road formation to a 6.4 metre wide bitumen sealed standard with 1 metre wide table drains. It should be noted that part of the existing physical road is not located within the road reserve.
- On receipt, the REF was subject to a review by relevant Council staff and a public consultation process.
- The public consultation process involved the individual notification of 35 land owners in the vicinity of the proposed works. The Wolumla Residents Action Group (WRAG) was formally notified as well.
- The REF was made available on Council's web page and, as a hard copy, at Council's Bega Administration Offices.
- The notification period extended from 31 March 2011 until 22 April 2011.
- Submissions were received up until the 22 April 2011.
- In response to the public consultation process, Council received six (6) written submissions objecting to the purpose and/or scope of the proposed works.
- The matter was reported to Council for consideration at its meeting dated 3 May 2011.

- In determining the matter, Council resolved on the 3 May 2011 to approve the upgrade of the road subject to a number of conditions. A copy of the Council resolution is provided at **Appendix B**.
- Council's Group Manager Infrastructure Waste and Water was formally notified of Council's resolution on the 6 May 2011.

2.6 COUNCILS PROCESS FOR FUNDING THE ROAD UPGRADE

Council's Waste Services Manager has advised the following:

- The Wanatta Lane upgrading works are estimated to cost $600,000.
- The road upgrade forms part of the capital cost for the project. $3.1 Million has been budgeted for development of the site infrastructure and construction of Stage 1 of the landfill.
- Council will fund the upgrade works from the Waste Fund (reserve).

Electricity Upgrade

3.1 INTRODUCTION

The 14 March 2011 Southern JRPP meeting required the provision of details of the necessary upgrades needed for electricity and likely environmental impacts. The following provides this information.

3.2 DISCUSSIONS WITH ESSENTIAL ENERGY

Council officers Toby Browne and David Basil met with (the then) Country Energy officer Mark Lane on site in 2008 to investigate potential routes for power supply to the site. Potential supply routes examined included overhead supply from Annabelle Close, and from an existing pole at the MacNeil property located at 690 Candelo Wolumla Road. The route from the Annabelle Close is preferred as it does not impact on privately owned land.

The potential to power the sites purely from a stand alone power generator was also discussed as an option. However, given the proposed automatic pumping systems associated with the facility, mains power was considered to be a superior option, with a generator kept as an auxiliary supply.

3.3 LIKELY LOCATION

GHD further investigated potential electricity supply routes in response to public submissions regarding potential impacts. The probable routes which do not impact on private land have been sketched (see **Appendix C**).

3.4 POTENTIAL ENVIRONMENTAL IMPACTS

The applicant has provided the following comments on the potential impacts of the electricity supply.

The likely direct environmental impacts associated with electricity supply to the site will ultimately depend on the route selected and the detailed design of the cabling and vegetation setbacks required. Provision of 11kV supply via bundled cabling to reduce potential vegetation impacts is preferred at this stage subject to approval of the final design.

Some vegetation removal will be required regardless of the route selected. However both options 1 and 2 are routes through areas of the site where vegetation removal would be minimised.

Option 1 follows the old bullock track, which enters the site near the intersection of Wanatta and Greendale Lanes. There are a small number of large remnant trees on this route which may be able to be avoided, with the remainder of the vegetation being relatively young regrowth.

Option 2 enters the site further west on Greendale Lane through an area that appears to have been completely cleared, probably in the last 20 to 30 years, and is now populated primarily with regrowth and grass.

Option 3 follows the Wanatta Lane road reserve north of the Greendale Lane intersection, and whilst it has not been dismissed as an option, it is constrained by steep roadside embankments and cuttings, along with areas of roadside vegetation which would most likely be affected by construction of overhead powerlines.

The Wanatta Lane road reserve between Annabelle Close and Greendale Lane is not densely vegetated, and impacts in this area would not be significant.

As detailed in Section 3.22.2 of the original assessment report, the service provider is required to undertake the necessary Part 5 assessment under the provisions of the EP&A Act 1979.

Further Environmental Impact Assessment

4.1 INTRODUCTION

The resolution of the 14 March 2011 Southern JRPP meeting required a detailed assessment of the:

- Odour
- Leachate
- Noise
- Air quality and micro-climate
- Ground and surface water impacts
- Mitigation and management measures required to ameliorate/mitigate any impacts.

This section of the report addresses these matters.

4.2 ODOUR

The following assessment information has been sourced from the EIS submitted to Council as part of the DA, specifically Section 9.4 of the EIS.

4.2.1 CRITERIA

The NSW DEC (now OEH) *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2005) provides guidance, standards and assessment criteria for air quality impacts of developments in NSW. Potential impacts to air quality as a result of the proposed development were assessed in the EIS in terms of odour against the OEH relevant guidelines and criteria.

The EIS states:

> *Odour assessment guidelines outlined by the DECCW determine an odour concentration that is acceptable to a certain population of people. Impacts from odorous air contaminants are often nuisance related rather than health related. As the detectability of an odour is a sensory property, whether or not an individual considers an odour to be a nuisance would depend on several properties, including frequency of exposure, odour intensity, duration of odour episodes and the offensiveness of the odour.*
>
> *The adopted odour assessment method is known as population based odour assessment and it uses the scale shown in Table 9.3* [of the EIS] *to determine the appropriate odour concentration an operation can feasibly operate within. This method assumes that in a densely populated area there will be a greater risk that some individuals within the community will find a given odour level unacceptable, than in a sparsely populated area.*
>
> *Table 9.3* [of the EIS] *details the odour performance criteria, to be exceeded not more than 1% of the time (99th percentile) for different population densities* (AECOM 2009:9-4)*.*

Table 9.3: Odour Performance Criteria	
Population of Affected Community	***Odour Performance Criteria (OU)***
Urban (Population ≥ 2000)	2.0
500 – 2000	*3.0*
125 – 500	4.0
30 – 125	5.0
2 – 10	*6.0*
Single Residence (≤2)	7.0
Note: OU – Odour Units **Source**: DEC 2005, Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in New South Wales	

The odour criterion that has been selected for use in this assessment is the 4.0 odour units (OU) criteria for the 99th percentile of predicted odour concentrations, which indicates that 99 percent of all odour predictions would fall below this concentration. This criterion has been chosen for the following reasons:

- *The area surrounding the proposed landfill is a rural residential area. Air quality in this area is likely to be characterised by agricultural odours from other sources beside the landfill which are subsequently likely to affect the sensitivity of the area's receptors to odours.*
- *The population density of the area surrounding the landfill area as a whole is not expected to have a population density in excess of 500 people.*

4.2.2 EXISTING ENVIRONMENT

The EIS identifies that the existing environment is predominantly rural and as such air quality in this area is likely to be characterised by agricultural odours. It stated further that no major odour sources were identified in close proximity to the proposed development which would be likely to generate odour impacts on the surrounding environment of the Central Waste Facility (CWF) (AECOM 2009:9-6).

In relation to sensitive receptors, the EIS provided the following:

> *The proposed CWF is located to the north northwest of the Wolumla Township. A number of rural residential receptors are located within 2 km of the proposed CWF. Receptors have been examined at various locations surrounding the CWF to ensure that representative residential locations have been assessed. Receptors have been plotted on Figure 9.2* [of the EIS]*, showing their relative location to the CWF.*
>
> *A recently approved rural residential subdivision is also positioned immediately north-east of the broader property encompassing the proposed CWF. Although the locations of future dwellings are unknown and are not included as receptors in this assessment, the likely location of the nearest future residential receptor within this subdivision is equidistant with the nearest existing receptor, being receptor number 26 ("Ayrdale") as indicated in Figure 9.2* [of the EIS].

4.2.3 POTENTIAL IMPACTS

4.2.3.1 Emissions Inventory

The EIS states:

> *An emissions inventory was also developed in order to define odour and dust emissions from the site.*
>
> *Odorous emission concentrations for the CWF were sourced from an Odour Impact Assessment performed for a larger waste facility in a rural area of Lithgow NSW, Blackman's Flat Landfill Air Quality Impact Assessment (AQIA) prepared by Holmes Air Sciences in April 2002. Due to the similarity in the landfill nature i.e. both Blackman's Flat and the proposed development are regional landfills, it was assumed that the proportions of waste would be similar. Whilst it would be expected that there would be slight differences in waste characteristics between Sydney and Bega Valley (resulting in slight odour character differences), for the purposes of dispersion modelling it has been assumed that the differences are insignificant. Therefore the utilisation of odorous emission concentrations from this facility is considered appropriate for the purposes of this assessment. Emission factors for potential particulate sources were obtained from the National Pollutant Inventory Emissions Estimation Technique Manual for Mining v2.3* (AECOM 2009:9-7)*.*

4.2.3.2 Dispersion Modelling

The EIS states:

> *Dispersion modelling was undertaken to determine potential impacts associated with odour emissions and generation of particulates from the proposed CWF. The scenario modelled for the odour and dust emissions from the CWF at each individual receptor assumed the 'worst case scenario' as follows:*
>
> - *the CWF operates at maximum capacity approaching completion with the last cell being filled and the remaining cells capped and emitting small amounts of odour*
> - *odour emissions from the active face only occur between 8 am and 5 pm. This allows for emissions one hour pre and one hour post landfill operation*
> - *the leachate pond emits odour constantly under all conditions*
> - *dust emissions occur between 9 am and 4 pm for truck emissions and between the hours of 8 am and 9 am and 4 pm and 5 pm for dozers working on overburden*
> - *no dust is generated from tracked vehicles working on waste material* (AECOM 2009:9-7)*.*

4.2.3.3 Odour

The EIS states:

> *The proposed CWF has the potential to generate odour from the:*
>
> - *active landfill face*
> - *final capped landfill cells*
> - *leachate ponds.*
>
> *The dispersion modelling undertaken indicates that there will be no exceedances of the assessment criteria as a result of operation of the proposed CWF, and the odour concentration contours provided in Figure 9.3* [of the EIS]*, as no residential receptors fall within the modelled 4 OU contour. Similarly, the dispersion modelling indicates that there would be no exceedance of the assessment criteria for future dwellings within the approved rural residential subdivision to the northeast of the CWF site. Based on the available data and predictions from the dispersion model, odour is not expected to cause adverse impacts on the environment surrounding the CWF* (AECOM 2009:9-10)*.*

4.2.4 MITIGATION MEASURES

The EIS states that in the unlikely event, following commencement of operations of the CWF, that odour complaints are received,

> *… additional options for assessing and mitigating odours that may be generated from the landfill should be considered. These options may include:*
>
> - *performing an odour audit of the facility to identify all potentially significant odour sources to ensure work practises match dispersion modelling*
> - *implementation of an odour register program with local residents to allow feedback from the community relating to odour strength and intensity should excessive odours be detected*
> - *modification of operational activities to minimise the potential for the generation of odours*
> - *modification of the LEMP to include procedures which ensure leachate is only kept in the primary leachate pond for a short period of time*
> - *contingencies in the LEMP to ensure the rapid management of overflow water should the primary pond overflow*
> - *aeration of the primary leachate pond to reduce the potential for the generation of odours*
> - *use of misting sprays would only occur in conditions where the predominate wind direction is not blowing towards the closest residential receiver (receptors 23 to 26, S-SE directions).*

4.2.5 SUMMARY

From the above it can be seen that from the dispersion modelling undertaken for the proposed development, that the pollutant modelled (odour) was predicted to fall below its relevant air quality impact assessment criteria.

Further, the EPA (as the ARA) has issued its GTAs for the EPL. Therefore the proposed development is consistent with the EPA's requirements for odour impact and therefore would not result in environmental pollution[1].

It is recommended the mitigation measures outlined above (to be imposed in the event that odour complaints are received once the facility has commenced operation) be included in the LEMP for the development, which would be required to be prepared by a condition of any consent granted for the development.

The development (operating with the recommended mitigation measures) is not expected to result in any significant odour impacts.

4.3 LEACHATE

4.3.1 BACKGROUND

The NSW EPA's (now OEH) *Environmental Guidelines: Solid Waste Landfills* (2006) define leachate as "the liquid that percolates through landfills as a result of infiltration and/or decomposition of the wastes" (2006:4). The guidelines provide environmental goals for landfilling operations. In relation to leachate, goal 2.1.1 states "Leachate must be controlled within the landfill site, ensuring that neither groundwater nor surface water is polluted".

[1] **Appendix D** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

4.3.2 LEACHATE MANAGEMENT SYSTEM

4.3.2.1 Components

Appendix L of the EIS describes the leachate management system (AECOM 2009c).

To contain the leachate within each of the waste cells, a composite liner system is to be used. The liner system would be used on the base of the excavated area of the cells, on the batters of the excavated slopes of the cells, and in the leachate storage ponds. The cells would also be constructed with a leachate collection and removal system (LCRS).

Base Liner System

The base leachate barrier system is to comprise the following (from top to bottom):

- Geotextile separation layer (270 g/m² non-woven geotextile);
- Gravel drainage layer (300 mm thick gravel drainage material);
- Geotextile protection layer (500 g/m² non-woven geotextile);
- Flexible Membrane Layer (FML) (2 mm thick High Density Polyethylene hydraulic conductivity $<10^{-14}$ m/s);
- Geosynthetic Clay Liner (GCL) (Permeability < 5 x 10^{-11} m/s); and
- Prepared subgrade.

The Base Liner System is to incorporate a leachate drainage layer constructed from granular material and separated from the waste with a geotextile separation layer.

The gravel drainage layer will be encapsulated by two (2) geotextiles and shall also serve as bedding material for the leachate collection piping. The geotextile separation layer will consist of a non-woven geotextile with a minimum mass greater than 270 g/m². The geotextile protection layer will consist of a non-woven geotextile with a minimum mass greater than 500 g/m². The FML will be textured on both sides and shall comprise a high-density polyethylene geomembrane exhibiting a hydraulic conductivity $<10^{-14}$m/s with a minimum thickness of 2 mm. The GCL is to comprise bentonite clay, encapsulated between two layers of geotextiles to form a low-permeable hydraulic barrier exhibiting a hydraulic conductivity <5 x 10^{-11} m/s, and installed on a prepared subgrade.

The geotextile protection layer directly above the FML may be deleted at the discretion of the Engineer should it be determined that the leachate drainage layer material will not adversely affect the FML and GCL properties necessary to maintain the specified performance criteria. Additionally, should angular drainage gravel be proposed for use, a heavier geotextile protection layer would be required.

A non-woven geotextile separation layer shall be placed over the aggregate to minimise the potential for clogging of the aggregate (by fines leached from the waste). A non-woven geotextile protection layer shall be placed under the aggregate and above the Flexible Membrane Layer (FML).

Batter Leachate Barrier System

The batter lining system comprises the following (from top to bottom):

- Geotextile protection layer (500 g/m² non-woven geotextile);
- FML (2 mm thick High Density Polyethylene w/hydraulic conductivity $<10^{-14}$ m/s);
- GCL (Permeability < 5 x 10^{-11} m/s); and
- Prepared subgrade.

The geotextile protection layer will consist of a non-woven geotextile with a minimum mass greater than 500 g/m². The FML will comprise a single-sided textured (textured side down) high-density polyethylene (HDPE) geomembrane exhibiting a hydraulic conductivity $<10^{-14}$ m/s with a minimum thickness of 2 mm. The GCL shall comprise bentonite clay, encapsulated between two layers of

geotextiles to form a low-permeable hydraulic barrier exhibiting a hydraulic conductivity <5 x 10^{-11} m/s and installed on a prepared subgrade. Any deviation from the Drawings must be pre-approved by the Engineer.

The batter lining system shall be securely fixed to the batter face. The anchor systems are comprised of anchor trenches constructed as shown on the Drawings provided in Appendix L of the EIS.

Leachate Storage Pond Barrier System

The leachate storage pond lining system will comprise the following (from top to bottom):

- FML (1.5 mm thick High Density Polyethylene hydraulic conductivity <10^{-14} m/s);
- GCL (Permeability < 5 x 10^{-11} m/s); and
- Prepared subgrade.

For the Leachate Storage Pond Liner System, The FML shall be textured on both sides and shall comprise a high-density polyethylene geomembrane exhibiting a hydraulic conductivity <10^{-14} m/s with a minimum thickness of 1.5 mm. The GCL shall comprise bentonite clay, encapsulated between two layers of geotextiles to form a low-permeable hydraulic barrier exhibiting a hydraulic conductivity <5 x 10^{-11} m/s, and installed on a prepared subgrade.

The liners shall be securely fixed to the batter face. The anchor systems are comprised of anchor trenches constructed as shown on the Drawings provided in Appendix L of the EIS.

Leachate Collection & Removal System

Construction of the LCRS includes installation of 160 mm diameter HDPE piping, installation of non-woven geotextile, placement of gravel drainage layer; installation of leachate sump pumps, construction of leachate storage ponds.

The LCRS is to comprise a 300 mm thick layer of aggregate, a network of perforated and solid polyethylene pipes located within the 300 mm thick layer of aggregate installed over the base of each landfill cell.

Collector Pipes

The up-gradient ends of the leachate collector pipes would extend to the surface where they would be fitted with sealed caps in order that the pipes may be inspected using CCTV and flushed or maintained as necessary throughout the life of the facility. The down-gradient ends of the leachate collector pipes would terminate and discharge at the leachate collection sumps. The leachate in each cell will drain by gravity to a sump from which it will be pumped to a leachate storage pond.

Leachate Sumps

Leachate sumps would be located at the low point at the northern end of each of the landfill cells. The sumps would provide a collection point for the leachate of sufficient depth (1 m) and volume to enable efficient operation of the automated submersible pumps. The lining system would continue on the base of the sump, and the sump would be filled with the same ‘single sized’ gravel material as the leachate drainage layer.

A 450 mm HDPE pipe would extend from the base of the sump, up the side slope of the landfill cell to the surface. A submersible pump operated by a float switch would be installed within the riser pipe and may be removed for maintenance and replacement as necessary. A high level alarm would also be fitted. The top end of the riser pipe would be sealed with a removable lid or cap in order to contain landfill gas. A small hole would be provided in the lid for the discharge pipe of the submersible pump and power supply lead. The hole would be sealed around the pipe and lead.

Leachate Storage

Three leachate storage ponds would be constructed in the western portion of the site. The leachate storage ponds have the capacity to store leachate generated during the 10% AEP rainfall year plus 2.5 years of leachate generated during a 50% AEP rainfall year without overflowing (the total pond storage capacity is 13.5 ML). Additionally, the leachate storage ponds have been designed with sufficient freeboard to accommodate rainfall from a 1 in 25 year wet weather event without overflowing.

In order to control the flow of leachate into the leachate storage ponds from the individual waste disposal cells, isolation valves would be provided in the riser from each sump prior to its junction with the conveyance pipe to the leachate storage pond. Flow valves would also be provided along the conveyance pipe on the downstream side of each riser connection and between the outlet of the conveyance pipe and the inlet of the leachate storage pond.

Leachate Disposal

The *Leachate Disposal Options Report* prepared by GHD that forms Appendix O of the EIS identifies that as the CWF is not yet operational the characteristics of the leachate to be generated are uncertain. Thus the following strategy was proposed for the management of leachate.

- *Staged development of the leachate management works, which will allow the quantity and characteristics of leachate generated at the site to be confirmed by monitoring, allowing the leachate treatment and disposal system to be designed with confidence. It should be noted that Stage 6 of the landfilling operation, when peak leachate generation is anticipated to occur, will not be active until approximately 20+ years after landfilling commences;*
- *Initially, a leachate management system capable of managing leachate generated during Stage 1 & part of Stage 2 of the landfilling operation would be installed at the site. This would encompass the following:*
  - *Landfill cell drainage and extraction system with a capacity to cater for the estimated peak monthly leachate generation event during a 10% AEP rainfall year i.e. 2,000 kL/month for Stage 2 of landfilling (or 1.2 L/s over 9 hrs/day pumping). If warranted, the pump would be replaced with a larger capacity pump; and*
  - *Three (3) leachate storage ponds, with a maximum capacity of 13.5 ML, which is estimated to provide sufficient capacity to store all leachate generated at the site during the projected Stage 1 and part of Stage 2 landfill operating period of 3.5 years without disposal, depending on actual weather conditions. If a 10% AEP rainfall year occurred in the first year and then every subsequent year was a 50% AEP (median) rainfall year, the combined 13.5 ML storage dams would provide at least 3.5 years of storage capacity (refer to Section 2.2, and Figure 1 in Appendix A); and*
  - *An irrigation system located around the perimeter of the leachate storage dam(s) for disposal of leachate via evaporation over the dam surface;*
- *Leachate generation (quantity and quality) would be monitored during Stage 1 and a portion of Stage 2 landfilling to verify the water balance model estimates, assess typical leachate characteristics and assist in commissioning leachate disposal infrastructure;*
- *Once the quantity and characteristics of the leachate are verified the remainder of the leachate management system would be reviewed, designed and constructed. At this stage, the preferred system would likely encompass the following:*
  - *Individual landfill cell drainage and extraction systems, designed to cater for peak monthly leachate generation during a 10% AEP rainfall year;*
  - *Leachate storage dam(s) (13.5 ML), which will provide far more storage than required to manage leachate generated during a 10% AEP rainfall year. Notably, the water balance modelling indicates only 5.5 ML of storage is required and thus only one of the leachate dam(s) [Pond A] would be used, except during extremely wet weather, thus minimising odour emissions from the ponds;*

- *A suitable leachate treatment plant, designed to cater for leachate generation during a 10% AEP rainfall year. This plant will provide Council with flexibility in how to manage leachate and reduce the risks of adverse impact, particularly from any treated leachate irrigation operations; and*
- *Irrigation of the treated leachate over a dedicated and controlled irrigation area. Generally, the treated leachate would be irrigated on vegetated land within the landfill footprint i.e. undisturbed areas prior to landfilling and capped/revegetated areas after landfilling. Up to 4 ha of land outside the landfill footprint may be required for irrigation during wet years. Runoff from the irrigation area would be collected and monitored and the irrigation area would be monitored to identify any adverse impacts.*

The former Department of Environment, Climate Change and Water (DECCW)'s General Terms of Approval (GTA) issued concur with this approach by virtue of providing the following terms in relation to the management of leachate:

O5.2. Unless otherwise approved in writing by the EPA, leachate must only be disposed of by:

a) Evaporation;

b) Irrigation within the leachate dam or within the active cell of the landfill; or

c) Disposal at a facility licensed to accept such waste.

O5.3 Irrigation of leachate within the active cell must only be undertaken such that ponding or run off does not occur.

Therefore at this point in time there is no proposal for an irrigation area outside of the leachate dam or active landfill cell.

Thus the management and disposal of leachate is as per the former DECCW's GTAs as outlined above.

4.3.3 IMPACTS

The potential impacts from leachate are surface and ground water pollution. Further, uncontrolled surface water run-on can lead to excessive generation of leachate.

In terms of potential groundwater pollution, GHD (2009b:10) states:

> *The intent of the landfill design is to provide a level of protection for the environment that meet or exceeds the recommended leachate barrier system prescribed in Environmental Guidelines: Solid Waste Landfill Guidelines (NSW EPA 1996).*

In terms of surface water pollution, the EIS concludes that:

> *The combined storage volume of the three leachate ponds would be sufficient to contain all leachate generated in a 1:100 yr rainfall event and therefore the likelihood of an overflow before the leachate treatment system is commissioned would be low. The risk to downstream environments attributable to failure or overflow of the leachate collection and storage system has been assessed as negligible* (AECOM 2009a:5-23).

The landfill is located near to the top of the catchment. Therefore up gradient overland flow would be minor. The development incorporates stormwater drains to divert any overland flow from entering the cells, thus avoiding excessive generation of leachate.

As the ARA, the EPA has issued its GTAs for the EPL. Therefore it is understood that the proposed leachate management system is consistent with the EPA's requirements for such and therefore would not result in environmental pollution[2].

[2] **Appendix D** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

4.3.4 MITIGATION MEASURES

The landfill has been designed in a series of cells to reduce the production of leachate. A leachate monitoring program would be undertaken quarterly during operation of the site as follows:

- provide data that would assist with the minimisation of the volume and concentration of leachate;
- minimise the leachate head build-up over the landfill liner; and
- ascertain any correlation between leachate quality and impacted groundwater.

The EPA, as the ARA has imposed conditions in its GTAs (and future EPL) for the requirements of leachate monitoring to ensure the development is not causing pollution.

4.3.5 SUMMARY

From the above it can be seen that the development is not expected to result in any pollution from the leachate collection, storage or disposal systems.

Further, the EPA (as the ARA) has issued its GTAs for the EPL. Therefore the proposed development is consistent with the EPA's requirements for leachate management and therefore would not result in environmental pollution[3].

No approval is given for the disposal of leachate other than

- Evaporation;
- Irrigation within the leachate dam or within the active cell of the landfill; or
- Disposal at a facility licensed to accept such waste.

Irrigation of leachate within the active cell must only be undertaken such that ponding or run off does not occur.

It is recommended the mitigation measures outlined above be included in the LEMP for the development, which would be required to be prepared by a condition of any consent granted for the development.

The development (operating with the recommended mitigation measures) is not expected to result in any significant adverse environmental impacts as a result of leachate generation or management.

4.4 NOISE

4.4.1 BACKGROUND

A *Noise Impact Assessment* (NIA) was undertaken by Heggies for the proposed development.

4.4.2 EXISTING ENVIRONMENT

The NIA identifies the proposed CWF is located within a rural area. It is situated on the western side of Wanatta Lane, approximately 4 km north of the town of Wolumla. The site surrounded by rural properties.

A number of rural residential receptors are established within the vicinity of the proposed CWF. The NIA examined the receptors at various locations surrounding the CWF to ensure that representative residential locations have been assessed.

[3] **Appendix D** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

A recently approved rural residential subdivision is also positioned immediately north-east of the broader property encompassing the proposed CWF. The locations of future dwellings are unknown and are not included as receptors in this assessment. The NIA notes however, that the likely location of the nearest future residential receptor within this subdivision is equidistant with, and exhibits similar topographic separation to, the nearest existing receptor, being R2 ("Ayrdale"). Consequently, the predicted noise levels exhibited at the nearest future residential receptor within this subdivision are considered to be similar to those noise levels predicted for R2.

The NIA incorporated

> *unattended background noise monitoring, which was conducted between 19 January 2006 and 31 January 2006 as well as between 10 March 2006 and 22 March 2006. Locations R1, R2, R4 and R7 were considered representative of locations having the lowest ambient noise environment in the vicinity.*
>
> *Within the periods selected as being representative of the background noise level, noise data during periods of rainfall and / or wind speeds in excess of 5 m/s (approximately 9 knots) were discarded.*
>
> *The summarised results of the background noise survey are presented in Table 15-2 of the EIS. Due to the operating hours of the proposed CWF (9 am to 4 pm), only daytime hours (7 am – 6 pm) ambient noise levels are presented below.*

Table 15-2: Summary of Existing LA90 (15 minute) Rating Background Levels and Existing LAeq (period) Ambient Noise Levels for Daytime Hours (7 am – 6 pm)

Monitoring Location	*LA90 (15 minute) Rating Background Level (RBL)*	*LAeq (period) Existing Ambient Noise Level*
R1 Ayr-Park	*30*	*59*
R2 Ayrdale	*30*	*55*
R4 Marden Farm	*30*	*57*
R7 Wanatta	*34*	*51*

Note: The LA90 represents the level exceeded for 90% of the interval period and is referred to as the average minimum or background noise level.
The LAeq is the equivalent continuous noise level defined as the level of noise equivalent to the energy average of noise levels occurring over a measurement period

4.4.3 NOISE ASSESSMENT CRITERIA

4.4.3.1 Construction

The DEC (now OEH) has published *The Construction Noise Guideline (2009)* for the control of construction noise.

The EIS states:

> *Noise level restrictions during a construction period are based on the expected duration of construction works. Generally, within any construction period, the LA10(15minute) noise level can be up to 20 dBA above the LA90(15minute) Rating Background Level (RBL) for construction lasting up to four weeks, up to 10 dBA above the RBL for 4 to 26 weeks duration and no more than 5 dBA above the RBL for construction activity in excess of 26 weeks.*
>
> *Furthermore, the DECCW's preferred approach to the control of construction noise involves time restrictions and the implementation of practical silencing measures to silence construction equipment. On the basis of the construction noise guidelines and the daytime LA90(15minute) RBL calculated from background monitoring, the relevant construction noise assessment goals relevant to the construction of the proposed CWF are given in Table 15.4* [of the EIS].

Table 15.4: Daytime Construction Noise Goals – dBA		
Location	***Name***	***Construction Noise Goals – LA10(15minute) Duration between 4 and 26 weeks***
R1	*Ayr-Park*	*40*
R2	*Ayrdale*	*40*
R3	*Stablehurst*	*40*
R4	*Marden Farm*	*40*
R5	*Greendale*	*40*
R6	*19 Greendale Lane*	*40*
R7	*Wanatta*	*44*

4.4.3.2 Operation

The NIA established the operational noise emission criteria for the proposed CWF with reference to the *NSW Industrial Noise Policy* (INP).

The EIS states (2009a:15-4):

> *Establishing the operational noise criteria includes an assessment of the RBL, the intrusiveness criteria, and the amenity criteria.*
>
> *The intrusiveness criterion essentially means that the equivalent continuous noise level (L_{Aeq}) of the source should not be more than 5 decibels above the measured (or default) RBL. The intrusiveness criteria have been set for the various hours of operations based on the measured RBL (Table 15-2) at the respective monitoring locations.*
>
> *The amenity assessment is based on noise criteria specific to land use and associated activities. The criteria relate only to industrial-type noise and do not include road, rail or community noise. If present, the existing noise level from industry is generally measured. If it approaches the criterion value, then noise levels from new industries need to be designed so that the cumulative effect does not produce noise levels that would significantly exceed the criterion. For high-traffic areas there is a separate amenity criterion. The cumulative effect of noise from industrial sources also needs to be considered in assessing the impact.*

The NIA identified that the residences surrounding the proposed CWF are best described by the "rural" receiver type and the amenity criteria have been set using the L_{Aeq} (period) contribution from industrial noise in conjunction with the INP amenity criteria for rural residences.

The EIS states:

> *As the proposed CWF represents the only significant existing industry in the area, the default 'acceptable' L_{Aeq} amenity criteria for a rural area have been adopted. The resulting operational intrusive and amenity noise emission criteria are given below in Table 15.6.*

Table 15.6: Operational Noise Emission Criteria – dBA for the Daytime Period (7am – 6pm)		
Receiver	***Intrusiveness Criterion LAeq(15minutes)[1]***	***Amenity Criterion LAeq (period)[2]***
R1 Ayr-Park	*35*	*50*
R2 Ayrdale	*35*	*50*
R3 Stablehurst	*35*	*50*
R4 Marden Farm	*35*	*50*
R5 Greendale	*35*	*50*
R6 19 Greendale Lane	*35*	*50*
R7 Wanatta	*39*	*50*
1. Measured RBL from Table 15.2 + 5dBA *2. From Table 15.5 Rural/day*		

From Table 15.6, the Project-Specific Noise Levels (PSNLs) for the daytime assessment period are the intrusiveness criteria, being the lower of the two.

4.4.3.3 Road Noise

On public roads, different noise assessment criteria apply to the vehicles which would be regarded as "traffic" rather than as part of the site operations noise sources. The relevant assessment criteria for public local and arterial roads to be used during both the construction and operation phases of the proposed development are set out in the *Environmental Criteria for Road Traffic Noise* (ECRTN) and are presented in Table 15.7 of the EIS, as replicated below.

Table 15.7: New Land Use Road Traffic Noise Criteria			
Type of Development	***Daytime Criteria***	***Night-time Criteria***	***Where Criteria Are Already Exceeded***
13. Land use developments with potential to create additional traffic on local roads	*LA_{eq}(1hour) 55 dBA*	*LA_{eq}(1hour) 50 dBA*	*Where feasible and reasonable, existing noise levels should be mitigated to meet the noise criteria. Examples of applicable strategies include appropriate location of private access roads; regulating times of use; using clustering; using "quiet" vehicles; and using barriers and acoustic treatments.* *In all cases, traffic arising from the development should not lead to an increase in existing noise levels of more than 2 dBA.*
7. Land use developments with potential to create additional traffic on existing freeways/arterials	*LA_{eq}(15hour) 60 dBA*	*LA_{eq}(9hour) 55 dBA*	
Note: Total traffic noise contribution including existing and project related vehicle movements.			

4.4.4 IMPACTS

The NIA utilised a computer model in order to determine potential impacts on the surrounding community associated with noise generated by construction and operation of the CWF. The model was developed to incorporate the significant noise sources and the intervening terrain to the closest potentially affected residential properties. The acoustical algorithms (CONCAWE) utilised by the software has been endorsed by the ANZECC and all NSW Government authorities as representing an appropriate predictive methodology.

The noise modelling in the NIA takes into account source sound level emissions and locations, screening effects, receiver locations, meteorological effects, ground topography and noise attenuation due to spherical spreading and atmospheric absorption.

4.4.4.1 Construction

The noise prediction model developed was for an expected 'worse case' construction/site preparation scenario. The construction scenario modelled noise generated from typical plant equipment with a 4 to 26 week construction duration. The modelled plant equipment and corresponding L_{A10} Sound Power Levels (SWLs) are shown in Table 15-8 of the EIS.

Table 15-8: Construction Plant and Equipment Sound Power Levels (SWLs)	
Plant Item	***LA10 Sound Power Level (dBA)***
Bulldozer – CAT D9	*111*
Soil Compactor – CAT 816	*106*
Excavator – CAT 320	*106*
Articulated Truck – CAT 730	*111*
Concrete Truck	*10*
Water Truck	*103*
Fuel Truck	*103*

The EIS notes:

> *the sound power levels given for each item of mobile equipment do not include noise emissions which emanate from reversing alarms. In the event that reversing alarm noise is considered to be a source of disturbance, the alarm noise level should be checked against the appropriate regulatory and health and safety requirements and the necessary mitigating action taken to achieve an acceptable noise reduction without compromising safety standards* (2009a:15-7).

The output results from the CWF construction / site preparation noise model are presented in Table 15.9 of the EIS as Predicted $L_{A10(15\ minute)}$ noise levels together with the relevant construction noise goals (based on construction duration of 4 to 26 weeks) for locations R1 to R7.

Table 15.9: Predicted Daytime Construction / Site Preparation Noise Levels		
Assessment Location	***Predicted LA10 (15minute) Noise Level***	***LA10 (15minute) Daytime Construction Goal[1]***
R1 Ayr-Park	*22*	*40*
R2 Ayrdale	*38*	*40*
R3 Stablehurst	*24*	*40*
R4 Marden Farm	*23*	*40*
R5 Greendale	*27*	*40*
R6 19 Greendale Lane	*33*	*40*
R7 Wanatta	*31*	*44*
1. From Table 15.4		

From the above table, it can be seen that the predicted noise emissions from the construction activities associated with the construction/site preparation works are lower than the relevant goals at all seven assessment locations.

4.4.4.2 Operation

The NIA considered two typical scenarios to predict the operation noise emissions from the proposed CWF. The two scenarios considered were deemed to be worst case scenario as they involve plant and equipment operating at the existing surface level in cells which are in a more elevated position within the landfill area. The two scenarios are:

- *Scenario A – Conclusion of first cell – landfilling with a compactor and a road truck is taking place in the more elevated section of the first cell, and cell construction is concurrently occurring in the subsequent cell using an excavator. A water truck is also being operated within the site.*
- *Scenario B – Conclusion of penultimate cell – landfilling with a compactor and a road truck is taking place in the more elevated section of the penultimate cell, and the final cell is being constructed concurrently using an excavator. A water truck is also being operated within the site.*

The following operating plant and equipment were used in the modelling:

Table 15-10: Operational Plant and Equipment Sound Power Levels (SWLs)	
Plant Item	***L_{Aeq} Sound Power Level (dBA)***
Soil Compactor – CAT 816	*103*
Excavator – CAT 320	*103*
Water Truck/Yard Truck (Dual Duty)	*100*
Road Truck	*96*

The output from the noise model predicted daytime LAeq(15minute) noise level contributions under both scenario operations at the seven assessment locations. These are presented in Table 15.11 of the EIS along with the respective PSNL criteria.

Table 15.11: Predicted Daytime Scenario A Operational Noise Levels – dBA re 20 µPa

Assessment Location	Predicted LAeq(15minute) Noise Level		LAeq(15minute) Daytime PSNL Criterion[1]
	Scenario A	Scenario B	
R1 Ayr-Park	13	6	35
R2 Ayrdale	29	18	35
R3 Stablehurst	17	24	35
R4 Marden Farm	13	12	35
R5 Greendale	17	7	35
R6 19 Greendale Lane	20	18	35
R7 Wanatta	20	30	35

1. PSNL derived from Table 15.6

From the above table it can be seen that operational noise emissions from the proposed CWF comply with the noise criteria at all of the residential assessment points during both worst case operating scenarios.

Concern was raised by an objector that reversing alarms weren't considered in the noise assessment. Council has provided the following additional advice in relation to this matter.

The issue of reversing alarm noise is considered in the EIS on page 15-7 and in Appendix K on page 19.

Council has an obligation to manage the specific OH&S risks associated with reversing plant. However the conventional beeper alarm may not be the only or most effective means of protecting worker safety. Various alternatives are available to the conventional tonal pulse alarm, and these are discussed in detail in a paper prepared for the NSW Department of Environment and Climate Change in 2009 (Burgess, M. & McCarty, M.(2009): *Review of alternatives to 'beeper' alarms for construction equipment*, School of Aerospace, Civil & Mechanical Engineering, UNSW at ADFA).

The sound power levels given for each item of mobile plant assessed in the EIS do not include noise emissions which emanate from reversing alarms. Given the potential variation in approaches to managing this OH&S issue, and the number of types and models of audible alarm available, it would be difficult to include in an assessment of noise impacts. If the audible alarms used on site are considered to be a source of disturbance to neighbours, then the alarm level will be checked against the appropriate regulatory health and safety requirements. Mitigating action will be taken to achieve acceptable noise reduction without compromising safety standards.

Mitigating action could include use of alternatives to the traditional tonal pulse (beeper) alarms. Alternatives include broadband alarms ("quackers"), directional and self adjusting alarms. Such alternatives could be introduced subject to a risk assessment.

4.4.4.3 Road Traffic

As Wanatta Lane and the Princes Highway have two separate criteria, the assessments were carried out and reported separately.

The following table outlines the existing and future peak hour traffic volumes for Wanatta Lane as provided in the EIS (2009a:15-9).

Table 15.12: Existing and Future (with CWF) Peak Hourly Daytime Operational Traffic Volumes				
Location	***Estimated Peak Hourly Traffic***			
	Existing		***Future with CWF***	
	Light	***Heavy***	***Light***	***Heavy***
Wanatta Lane	*20*	*1*	*25*	*6*

Table 15.13 from the EIS provide the predicted peak LAeq(1hour) traffic noise levels at the two assessment locations closest to the proposed access route of the operational phase of the proposed CWF. It is replicated below.

Table 15.13: Predicted LAeq Operational Traffic Noise Levels			
Assessment Location	***Offset Distance from Wanatta Lane***	***Daytime LAeq(1hour) Noise Levels – Wanatta Lane***	
		Existing	***Future with Proposed CWF Operations***
R2 Ayrdale	*750 m*	*23.4 dBA*	*28.5 dBA*
R7 Wanatta	*850 m*	*22.6 dBA*	*27.7 dBA*

From the above it can be seen that the existing daytime $LA_{eq(1hour)}$ noise levels for existing and future (with the CWF) operational traffic flows are lower than the DECCW recommended assessment criterion of 55 dBA at the identified receptor locations

The following table from the EIS outlines the existing and future daily daytime traffic volumes for the Princes Highway as provided in the EIS (2009a:15-10).

Table 15.14: Existing and Future (with CWF) Daily Daytime Operational Traffic Volumes				
Location	***Estimated Daily Traffic***			
	Existing		***Future with CWF***	
	Light	***Heavy***	***Light***	***Heavy***
Princes Highway	*3,256*	*314*	*3,261*	*319*

Table 15.15 from the EIS provide the predicted L_{Aeq}(15hour) traffic noise levels at the assessment location nearest to the Princes Highway of the operational phase of the proposed CWF. It is replicated below.

Table 15.15: Predicted LAeq Operational Traffic Noise Levels			
Assessment Location	***Offset Distance from Princes Highway***	**Daytime L_{Aeq}(15hour) Noise Levels – Princes Highway**	
		Existing	***Future with Proposed CWF Operations***
R7 Wanatta	*280 m*	*38.9 dBA*	*39.0 dBA*

From the above it can be seen that the existing daytime $L_{Aeq(15hour)}$ noise levels for the existing and future (with CWF) operational traffic flows are lower than the DECCW recommended assessment criterion of 60 dBA at the assessment location.

4.4.5 MITIGATION MEASURES

To minimise any potential adverse noise impacts during construction or operation of the proposed CWF, the EIS has recommended the following mitigation measures:

- *the quietest plant and equipment should be utilised on site during both construction and operation*
- *standard daytime construction and operation hours would be adhered to concurrent use of noisy items of plant and equipment should be avoided where possible*
- *silencing devices should be fitted to plant and equipment including loaders, excavators, site vehicles and trucks where possible to further minimise noise emissions*
- *fixed items of plant and equipment should be fitted with acoustic enclosures (where possible, subject to operational and safety requirements)*
- *all entry and departure of heavy vehicles to and from site should be restricted to the nominated construction hours*
- *in the unlikely event of a complaint from nearby residents with respect to noise emissions from the proposed CWF, a staged Noise Reduction Programme would be designed and implemented.*

The following additional mitigation measure shall also be included in the LEMP:

- If the audible alarms used on site are considered to be a source of disturbance to neighbours, then the alarm level will be checked against the appropriate regulatory health and safety requirements. Mitigating action will be taken to achieve acceptable noise reduction without compromising safety standards.

  Mitigating action could include use of alternatives to the traditional tonal pulse (beeper) alarms. Alternatives include broadband alarms ("quackers"), directional and self adjusting alarms. Such alternatives could be introduced subject to a risk assessment.

4.4.6 SUMMARY

From the above it can be seen that the proposed development is expected to achieve the recommended noise assessment criteria at the nearest residential receptors for all facets of the development, being construction, operation and road noise.

Further, the EPA (as the ARA) has issued its GTAs for the EPL. Therefore the proposed development is consistent with the EPA's requirements for noise impact and therefore would not result in environmental pollution[4].

It is recommended the mitigation measures outlined above be included in the LEMP for the development, which would be required to be prepared by a condition of any consent granted for the development.

The development (operating with the recommended mitigation measures) is not expected to result in any significant noise impacts.

4.5 AIR QUALITY & MICROCLIMATE

The following assessment information has been sourced from the EIS submitted to Council as part of the DA, specifically Section 9.4 of the EIS.

[4] **Appendix C** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

4.5.1 CRITERIA

The NSW DEC (now OEH) *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2005) provides guidance, standards and assessment criteria for air quality impacts of developments in NSW. Potential impacts to air quality as a result of the proposed development were assessed in the EIS in terms of generated suspended particulate matter (dust) against the OEH relevant guidelines and criteria.

The EIS states:

> *Particulate emission from the CWF would be expected to comprise two main fractions of dust; total suspended particulates (TSP) and particulate matter less than 10 microns (PM_{10}). TSP represents all suspended particulates from fine particulates to coarse particulates up to a size of approximately 30 microns. TSP impacts typically relate to amenity concerns (predominantly visual concerns), as much of the TSP size fraction is too large to penetrate deeply into the human respiratory tract.*
>
> *PM_{10} represents all particulate matter with aerodynamic diameter less than 10 microns. PM_{10} fraction of suspended dust is typically used as a measure of potential health impacts, as dust of this size has the potential to penetrate deeply into the human respiratory tract and cause health effects. Whilst it is considered that there is no safe level for dust inhalation, studies performed over large populations in Australia and overseas, have developed guideline concentrations that can be used as indicators of levels above which there is the potential for health impacts.*
>
> *Particulate ground level criteria referenced by DECCW for particulates are shown in Table 9.4* [of the EIS] (AECOM 2009:9-5).

Table 9.4: Dust Assessment Criteria		
Particulate Fraction	***Averaging Period***	***Particulate Criteria (µg/m3)***
TSP	*Annual*	*90*
PM10	*Annual*	*30*
PM10	*24 Hour*	*50*

The EIS states that TSP has been used as a measure of amenity impacts from the proposed CWF.

4.5.2 EXISTING ENVIRONMENT

The EIS (2009a:9-6) notes that the existing environment surrounding the CWF has no obvious large sources of particulates (e.g. mining activities, large scale agricultural activity involving tilling the earth), therefore it is expected that the background particulate concentration would be low. No existing particulate monitoring data relevant to the study area was identified.

In relation to sensitive receptors, the EIS provided the following:

> *The proposed CWF is located to the north northwest of the Wolumla Township. A number of rural residential receptors are located within 2 km of the proposed CWF. Receptors have been examined at various locations surrounding the CWF to ensure that representative residential locations have been assessed. Receptors have been plotted on Figure 9.2* [of the EIS]*, showing their relative location to the CWF.*
>
> *A recently approved rural residential subdivision is also positioned immediately north-east of the broader property encompassing the proposed CWF. Although the locations of future dwellings are unknown and are not included as receptors in this assessment, the likely location of the nearest future residential receptor within this subdivision is equidistant with the nearest existing receptor, being receptor number 26 ("Ayrdale") as indicated in Figure 9.2* [of the EIS].

4.5.3 POTENTIAL IMPACTS

4.5.3.1 Microclimate

The Panel has confirmed that it defines microclimate as:

> *… relating to the assessment of local meteorological conditions specific to the site and the impacts of the development given local meteorological conditions.*

Such meteorological parameters include: temperature and humidity; rainfall, evaporation and cloud cover; wind speed and direction; atmospheric stability class; katabatic air drainage; and air re-circulation.

The EIS has not provided a specific section on the impacts of the development on microclimate. However, it is unlikely that the development would result in any significant impact on the microclimate in terms of these factors (i.e. the development is not likely to significantly change local temperatures, humidity, rainfall, etc).

Consideration of the microclimatic conditions was given in the assessment of the impacts of the proposed development on air quality (i.e. odour and dust/particulates).

As part of these assessments, a meteorological recording station was installed on site. The EIS states it demonstrated that it was able to provide data that met the (then) DECCW requirements and reasonably reflected the meteorological conditions of the Wolumla areas. The station provided twelve months (June 2006-June 2007) of continuous on-site data for the preparation of the air quality impact assessment.

4.5.3.2 Emissions Inventory

The EIS states:

> *An emissions inventory was also developed in order to define odour and dust emissions from the site.*
>
> *Odorous emission concentrations for the CWF were sourced from an Odour Impact Assessment performed for a larger waste facility in a rural area of Lithgow NSW, Blackman's Flat Landfill Air Quality Impact Assessment (AQIA) prepared by Holmes Air Sciences in April 2002. Due to the similarity in the landfill nature i.e. both Blackman's Flat and the proposed development are regional landfills, it was assumed that the proportions of waste would be similar. Whilst it would be expected that there would be slight differences in waste characteristics between Sydney and Bega Valley (resulting in slight odour character differences), for the purposes of dispersion modelling it has been assumed that the differences are insignificant. Therefore the utilisation of odorous emission concentrations from this facility is considered appropriate for the purposes of this assessment. Emission factors for potential particulate sources were obtained from the National Pollutant Inventory Emissions Estimation Technique Manual for Mining v2.3* (AECOM 2009:9-7).

4.5.3.3 Dispersion Modelling

The EIS states:

> *Dispersion modelling was undertaken to determine potential impacts associated with odour emissions and generation of particulates from the proposed CWF. The scenario modelled for the odour and dust emissions from the CWF at each individual receptor assumed the 'worst case scenario' as follows:*
>
> - *the CWF operates at maximum capacity approaching completion with the last cell being filled and the remaining cells capped and emitting small amounts of odour*
> - *odour emissions from the active face only occur between 8 am and 5 pm. This allows for emissions one hour pre and one hour post landfill operation*
> - *the leachate pond emits odour constantly under all conditions*
> - *dust emissions occur between 9 am and 4 pm for truck emissions and between the hours of 8 am and 9 am and 4 pm and 5 pm for dozers working on overburden*
> - *no dust is generated from tracked vehicles working on waste material* (AECOM 2009:9-7).

4.5.3.4 Dust

The following sources of particulate matter were identified in the EIS as being generated by the proposed CWF:

- vehicle movements on unsealed roads (waste collection trucks)
- tracked vehicles moving overburden
- wind erosion.

The EIS provided the following potential impacts from the modelling:

> *The predicted increases in annual average TSP and PM10 concentrations are depicted in Figures 9.4 and 9.5, respectively. Predicted TSP and PM10 emissions generated by the proposed CWF fall below the DECCW air quality assessment criteria for sensitive receptors, as shown in Table 9-5. The dispersion modelling also indicates that there would be no exceedance of the assessment criteria for future dwellings within the approved rural residential subdivision to the north-east of the CWF site. It is therefore expected that potential impacts associated with dust from the proposed CWF would not result in any significant impact on the surrounding environment. Due to the low predicted concentrations and low dust generation rates, cumulative dust impacts on the environment would not be expected.*
>
> *There were no exceedances of the TSP or PM10 criteria, dust concentrations were predicted to be low and nearby residential receptors fall well outside of the outer TSP and PM10 contours (Figures 9.4 and 9.5). Consequently, it was not considered necessary to model dust deposition rates* (AECOM 2009:9-10).

4.5.4 MITIGATION MEASURES

The EIS states that the dispersion modelling undertaken for the proposed development indicates that potential impacts associated with the generation of odour and dust from the CWF would not have a significant impact on the receiving environment (AECOM 2009:9-11).

The EIS also states that in the unlikely event that odour complaints occur following the commencement of operation of the proposed CWF, additional options for assessing and mitigating odours that may be generated from the landfill should be considered. These options may include:

- performing an odour audit of the facility to identify all potentially significant odour sources to ensure work practises match dispersion modelling
- implementation of an odour register program with local residents to allow feedback from the community relating to odour strength and intensity should excessive odours be detected
- modification of operational activities to minimise the potential for the generation of odours
- modification of the LEMP to include procedures which ensure leachate is only kept in the primary leachate pond for a short period of time

- contingencies in the LEMP to ensure the rapid management of overflow water should the primary pond overflow
- aeration of the primary leachate pond to reduce the potential for the generation of odours
- use of misting sprays would only occur in conditions where the predominate wind direction is not blowing towards the closest residential receiver (receptors 23 to 26, S-SE directions) (AECOM 2009:9-11).

4.5.5 SUMMARY

From the above it can be seen that from the dispersion modelling undertaken for the proposed development, that all pollutants modelled (TSP and PM10) were predicted to fall below their relevant air quality impact assessment criteria.

Further, the EPA (as the ARA) has issued its GTAs for the EPL. Therefore the proposed development is consistent with the EPA's requirements for dust impact and therefore would not result in environmental pollution[5].

It is recommended the mitigation measures outlined above be included in the LEMP for the development, which would be required to be prepared by a condition of any consent granted for the development.

The development (operating with the recommended mitigation measures) is not expected to result in any significant dust impacts.

4.6 GROUND AND SURFACE WATER

4.6.1 EXISTING ENVIRONMENT

4.6.1.1 Surface Water

The proposed CWF is located approximately 1 km east of Wolumla Creek. The site is located across a ridgeline, which forms the head of several gullies. The gullies traverse the site before joining Wolumla Creek. Both Wolumla Creek and the gullies are ephemeral streams. Upstream of the site, Wolumla Creek has a catchment area of approximately 69 km².

4.6.1.2 Flooding

The site of the proposed CWF is located approximately 30-40 m above the bed of Wolumla Creek and beyond the limits of the Wolumla Creek 100 year floodplain and 100 year ARI flood. Any flooding of the site would arise only from local flooding along the ephemeral gullies in the area. Analysis of the gullies in the vicinity of the proposed landfill was undertaken to estimate such an event for preliminary 100 year flood levels.

4.6.1.3 Groundwater

A Baseline Groundwater Monitoring Assessment was undertaken by HLA for the subject site and proposed development. It had the following findings:

> *Groundwater across the Site is between 4 and 21 metres below ground surface (mbgs). The depth to groundwater is a function of topographical elevation, with deeper groundwater occurring at relatively higher elevations in the eastern portion of the Site and shallow groundwater occurring in the western portion of the Site. During field work, HLA noted a groundwater seep, present at the base of the natural slope, to the north of Wolumla Creek. HLA infer the local groundwater is likely to discharge into Wolumla Creek.*

[5] **Appendix D** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

Concentrations of total petroleum hydrocarbons (TPH) in the C'5 - C_{28} range were detected in all groundwater monitoring wells at concentrations ranging from 1,600 µg/L (MB2) to 5,200 µg/L (MB1). Concentrations of TPH C_{29} - C_{3B} were also detected in all groundwater monitoring wells at concentrations ranging from 5,530 µg/L(MB3) to 26,700 µg/L(MB1). Copper and zinc were detected slightly in excess of ANZECC (2000) trigger levels at SW1 (copper) and MB3 (zinc). No other contaminants were detected in excess of laboratory practical quantitation limits.

TPH concentrations were identified in all three groundwater monitoring wells at concentrations significantly greater than laboratory PQLs. However, review of well installation records did not suggest the presence of hydrocarbon contamination in soil or groundwater at the time of drilling, nor are there any known sources of hydrocarbon contamination in the area, or up gradient, of the monitoring wells.

Review of laboratory chromatograms identifies the TPH impact as hydraulic oil. As such, the reported TPH is likely attributed to impact during drilling or other unidentified impacts.

Based on the available information, the TPH data obtained from the existing wells are considered to be anomalous, and is not considered representative of baseline groundwater quality at the site.

Overall, the groundwater conditions identified (including the anomalous TPH) are not indicative of significant groundwater contamination, and should not preclude the suitability of the site for potential future use as a waste facility.

The current TPH data from the existing monitor wells are considered anomalous and not suitable for assessing baseline groundwater conditions at the site. This is due to potential for localised contamination arising from the well installations or other unidentified source.

Accordingly, the existing monitor wells are not considered suitable for future groundwater monitoring.

To confirm baseline conditions at the site, HLA recommends the following:

1. *Clean out the existing wells (if possible), to enable re-sampling; or*
2. *Installation of new wells for groundwater monitoring during landfill construction. These wells could form part of the well installation that will be required as part of future monitoring (leachate) of the operational landfill. Monitoring should include TPH analysis, to confirm groundwater conditions.*

A monitoring program should be developed which will address the standard DEC requirements for monitoring solid waste landfill sites, based on the nature and waste to be disposed at the proposed CWF (HLA 2006:ES1-2).

4.6.2 POTENTIAL IMPACTS

4.6.2.1 Surface Water Quality

During Construction

The EIS states:

During construction and site preparation activities there is the potential for impacts to surface water quality from suspended solids should erosion occur during earthworks and vegetation clearing. High suspended solids content in water reduces light penetration and visibility, which limits plant growth and fish movement. Sedimentation of suspended material can reduce water depths, change drainage patterns and smother benthic flora and fauna.

The surface water management measures and erosion and sediment control measures for the duration of the site preparation and construction phases are overviewed in Section 8.5.1 [of the EIS] (AECOM 2009a:8-4).

The erosion and sediment control measures are included in **Section 4.6.3**.

Operation

The EIS identifies the following potential pollutants of surface water being generated through operation of the proposed development:

- contaminants associated with leaching of landfill material (leachate);
- hydrocarbons and chemicals from leaks and spills;
- gross pollutants escaping from vehicles at the tip face; and
- suspended soil particles in stormwater.

Leachate

The EIS has identified that the risk of leachate entering the surface water system from the landfill is low given the nature of the soils and that the proposed design includes the installation and on-going operation of a leachate collection, storage and treatment system that would manage the leachate separately from the site runoff.

Probability of Leachate Pond Overflows

Concern was raised in submissions to the DA regarding the impacts of overflows of leachate into downstream receiving waters.

GHD (2009) evaluated leachate generation and management at the proposed Bega Central Waste Facility (CWF) during extreme wet weather events. The evaluation process included analysing historical rainfall data for the region and identifying extreme wet weather events/periods, being:

- the wettest rainfall year on record (1934, 1,883 mm of rain, 0.85% AEP event or 117 year ARI rainfall year);
- a period of particularly high rainfall (1970 – 1977), which includes the very high rainfall event of 535mm of rainfall in February 1971 and a number of successively high annual rainfall events; and
- the 20 year ARI rainfall year (1974, 1,566mm of rain).

This was followed by an evaluation of leachate generation at the proposed CWF during the identified wet weather periods; and an assessment of the performance of the proposed leachate management system during these extreme wet weather events/periods using a water balance model.

The EIS summarises the results of the above evaluations:

> ***Proposed CWF Leachate Management Measures and System***
>
> *The proposed leachate management measures and system for the CWF have been designed in accordance with NSW DECCW guidelines, to cater for leachate generated during the 10 year ARI rainfall year.*
>
> *In summary, the proposed measures / system will comprise the following:*
>
> - *Surface water drainage that excludes up gradient surface water runoff from entering the landfill cells – to minimise leachate generation.*
> - *Composite lined (HDPE + GCL) landfill cells – to contain all leachate generated and prevent groundwater contamination.*
> - *Separate leachate drainage systems within each of the 6 landfill cells – to allow effective collection and removal of leachate.*
> - *A staged landfilling operation comprising 6 separate landfill cells, which allows staged filling and final covering (capping) so as to minimise leachate generation.*
> - *Daily compaction and covering of the landfilled waste using the low permeability soils excavated on site – to minimise the infiltration of rainfall and surface water into the landfilled waste and consequently minimise leachate generation.*

- *Intermediate covering of the landfilled waste using the low permeability soils excavated on site - to minimise the infiltration of rainfall and surface water into the landfilled waste and consequently minimise leachate generation.*
- *13.5 ML of operational leachate storage in three dams (A: 6.0 ML, B: 4.6ML, C: 2.9ML) on the site, plus a further 0.65 ML of emergency storage in the dams i.e. 300mm depth between the operational Top Water Level of the dams and the dam spillway invert level.*
- *In addition, under extreme wet weather conditions leachate could be stored within the landfill cells. It has been estimated that up to 7,595 ML of leachate could be conservatively stored within the landfill cells (Stage 1: 2,060 ML, Stage 2: 1,790 ML, Stage 3:1,460 ML, Stage 4: 1,350 ML, Stage 5: 605 ML, Stage 6: 330 ML).*
- *It should be noted that only 5.5 ML of storage is required to cater for all leachate generated during a 10 year ARI rainfall year. 13.5 ML of operational storage is proposed to allow staged development of the leachate treatment and disposal system (see the Leachate Disposal Options Report attached as Appendix O).*
- *A leachate treatment plant to cater for leachate generated during the 10 year ARI. The capacity of the plant is proposed to be confirmed by monitoring during the first year of operation, but modelling indicates a treatment capacity of the order of 15 – 25 kL/day for Stages 1 & 2 of landfilling. Treatment capacity would need to be increased, possibly up to 50 kL/day during Stage 6.*
- *Irrigation of the effluent from the leachate treatment plant on site, over an area of 2 to 4 ha for Stages 1 & 2 of landfilling. Initially, irrigation would occur within the proposed landfill footprint, within the undeveloped landfill cells. As landfilling proceeds the irrigation would be moved onto the completed landfill cells and other suitable areas on the site (up to 4.0 ha outside the landfill footprint would be required during extended wet weather)* (AECOM 2009a:8-8).

Performance during the Wettest Rainfall year on Record

The wettest rainfall year on record occurred in 1934 when 1,833mm of rain fell in Bega. This rainfall year has been identified as a 0.85% Annual Exceedance Probability (AEP) event, or a 117 Average Recurrence Interval (ARI) event. The performance of the proposed leachate management system during this rainfall year was evaluated using a water balance model by GHD in its Leachate Storage Modelling Report dated September 2009 (refer Appendix P).

The results of the water balance modelling show that the worst case scenario would occur if the rainfall event occurred during Stage 6 of landfilling, and that the proposed system would cope with such a rainfall year without leachate being discharged from the leachate storage dams. The maximum volume of leachate stored on the site would be 12.4 ML, if the event occurred during Stage 6 of landfilling. This is less than the 13.5 ML operational storage of the proposed leachate storage dams (Figure 8.1). It should be noted that the emergency storage in the dams (of 650 kL) and storage in the landfill cells (7.6 ML) should not need to be used.

It was identified that a series of high rainfall years occurred during the early to mid 1970s, which included a very high rainfall month of 535mm in February 1971. This period also included 1,040mm of rainfall in 1971, 1,567 mm of rainfall in 1974, 1,220 mm of rainfall in 1975 and 1,405 mm of rainfall in 1976. All of these annual rainfall events were less than the annual rainfall in 1934 (of 1,833mm); however, leachate generation during this period was assessed to determine if the proposed leachate management system could cope with this extended wet period.

The results indicate that infiltration through the various landfill cover layers was less in all years during this period (1970 – 1977) than the 1934 rainfall year (see Attachment A); e.g. infiltration through the final landfill cover layer during the 1934 rainfall year would be 135mm whilst the maximum annual infiltration during the period 1970 – 1977 would occur in 1976 (at 108mm). Thus, the 1934 rainfall year would generate the highest quantity of leachate. Consequently, if the proposed leachate management system can cope with leachate generated during the 1934 rainfall year without overflowing, as shown in the previous section, then it would cope with all leachate generated during the period 1970 to 1977 (AECOM 2009a:8-9).

Performance during the 20 Year ARI Rainfall Year (1974)

To confirm the performance of the leachate management system during the 1970s, the performance of the system was modelled during the highest rainfall year during that period (1974, 1,566mm of rainfall), which was identified as a 20 year ARI rainfall year.

The worst case scenario would occur if the rainfall occurred during Stage 1 of landfilling. The system would cope without any overflow of leachate from the leachate storage dams. The maximum volume of leachate requiring storage would be 7.75 ML, which is less than the operational storage volume of the proposed leachate storage dams (13.5 ML) as shown in Figure 8.2. Again, the emergency storage in the leachate storage dams (of 650 kL) and the storage capacity in the landfill cells (7.6 ML) should not need to be used.

Consequently, it is concluded that the leachate management measures and system proposed for the proposed CWF would cope with all rainfall events that have occurred over the last 120 years without leachate overflowing from the proposed leachate storage dams (AECOM 2009a:8-9).

The EIS continues that the likelihood of an overflow of the leachate from the landfill is remote, as the landfill base is lined and has an extremely large capacity to store leachate. Further, there are bunds between all stages and thus the landfill has storage capacity in all stages.

Potential Impact of a Leachate Overflow on Local Water Supply

The site drains to the local watercourse which ultimately flows into the river from which the Council draws in drinking water (many kilometres downstream).

The modelling of leachate generation at the site undertaken by GHD (2009) showed that if the landfilling operation occurs as proposed there would be no discharge of untreated leachate from the site during any rainfall event that has occurred in the last 120 years, including the highest rainfall year on record (1934). This is due to the large size of the leachate storage dam (13.5 ML) and amount of storage available within the lined landfill cells.

Figure 8.1 from the EIS (provided below) shows a schematic of the potential leachate contamination path from a breach in a landfill leachate pond or landfill overflow and the path to drinking water supply some 20 km downstream of Wolumla Creek.

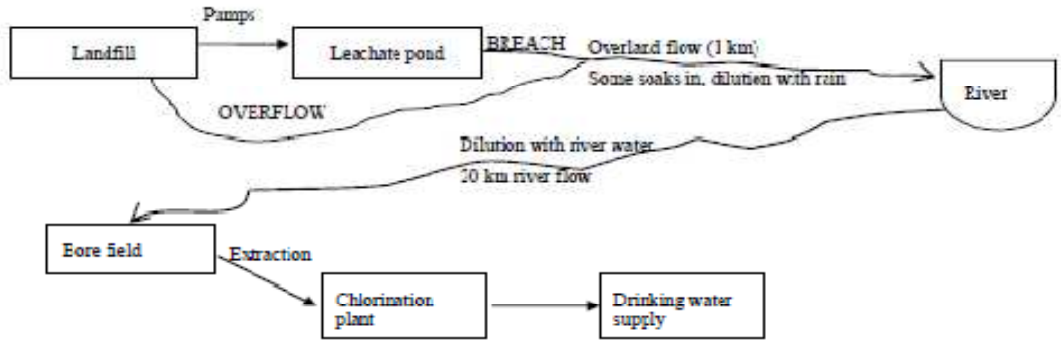

Figure 8-1: Schematic of potential drinking water contamination pathway

From this a risk assessment was undertaken to determine the risks to drinking water pollution and the likelihood of this occurring. This risk assessment from Table 8-4 in the EIS is provided below:

Table 8-4: Risk Summary and Assessment			
Event	***Possible Cause***	***Likelihood***	***Mitigating Factor***
Overflow of leachate from landfill.	*Extreme rainfall event, which may occur once in 150 years.*	*Remote – Landfill base is lined and has an extremely large capacity to store leachate.*	*Bunds between all stages.* *The landfill has storage capacity in each stage.*
Leachate pond breach/leakage.	*Accident with a compactor to the north western corner of the leachate pond, at a time when the water levels in the pond are high.*	*Remote – Ponds are designed to store leachate below surrounding ground level. They are lined, so leakage is unlikely.*	*Pond A is the only pond containing untreated (raw) leachate. Ponds B and C would normally contain treated leachate, which is significantly less concentrated than raw leachate.*
Leachate reaches Wolumla Creek.	*Leachate flowing from breach in pond or from landfill overflow in extreme rainfall event, when combined storage capacity for leachate in landfill and leachate ponds is exceeded.*	*Unlikely - Possible for some leachate to reach the creek, but due to the distance to the creek ~ 1 km, a large proportion of the leachate would soak into the ground before it reached the creek, in dry conditions. In wet weather conditions, the leachate would be significantly diluted by rainfall before it arrived at the creek.*	*Flow of leachate would not continue indefinitely – landfill operators would discover the problem (leachate pond breach) and rectify by either pumping to other pond or back into the landfill.* *Dilution of leachate with rain → reducing the concentration of potential contaminants*
Contaminated water reaches borefield area.	*The contaminants that reached the creek overland would travel approximately 20 km downstream within the flowing water, to the borefield.*	*Unlikely – Leachate would be diluted as soon as it mixes with the river water, and this would continue as it travels in the river towards borefield, especially under the type of wet weather conditions that caused the leachate overflow.*	*Further dilution of already diluted leachate with stream water.* *During extreme rainfall events, the dilution factor would be very high. The borefield pumps draw a maximum of 5 ML/day, so only a small proportion of the contaminants would be pumped from the borefield to be used as drinking water. The rest of the contaminants would continue along the river past the borefield.*
Contaminants that have reached the river adjacent to the borefield are extracted for drinking water use, and consumed by local residents, and then cause actual harm to these residents.	*Contaminants would pass from the river into the borefield, then into the treatment plant, and into the local water supply.*	*Remote – Any contaminants that have reached this point would have been be twice diluted and would also undergo disinfection (chlorination) prior to distribution into the water supply network. This would destroy some of the contaminants present (faecal coliforms and E. coli).*	*Most of the contaminants that have been identified are relatively benign in low concentrations – at higher concentrations, some contaminants such as iron, manganese and total dissolved solids affect water taste and colour rather than have health impacts.*
OVERALL LIKELIHOOD OF DRINKING WATER BECOMING CONTAMINATED	*REMOTE*		
OVERALL CONSEQUENCE OF LIKELY TYPE OF CONTAMINANTS ENTERING LOCAL DRINKING WATER	*MINOR*		
OVERALL RISK LEVEL FOR LOCAL RESIDENTS	*NEGLIGIBLE*		

The EIS concludes from the above that the risk of leachate from the landfill affecting the water that residents drink is quite remote.

Spills and Leaks

The development involves the storage of small quantities of lubricants and chemicals for use on the site. These would include herbicides, pesticides, cleaning agents, flocculants, hydraulic fluid, grease and engine oil.

There would be no fuel stored on site; however fuel would be typically supplied to the site from a 600L diesel tank mounted on a utility vehicle. Refuelling would occur within the landfill footprint.

Storage areas for fuels, oils and other liquid chemicals would be covered and surrounded by impervious bund walls. The retained volume in the bunded area would be no less than 110% of the volume of the largest container within the bunded area. There would be no pipes and valves in the bund. The storage area would slope to one corner to allow for clean up.

Chemical drums would not be left open either inside or outside of bunded areas.

A copy of the EPA Bunding and Spill Management Guidelines would be kept at the site office, made available to the staff that manage the storage of materials and routinely implemented.

Old drums used as temporary works markers would not contain chemical or hydrocarbon residues.

The EIS states the potential for contamination caused by spills and leaks would be minimised with the adoption of the following safeguards:

- Implement an Emergency Response Procedure as part of the LEMP detailing measures to be taken in the case of an emergency such as a spill.
- Ensure any chemicals stored on site are kept in a secure, bunded hardstand area.
- Ensure plant used on site is well maintained and regularly checked for leaks for hydraulic fuels and oils.
- Provide spill kits on site.

Gross Pollutants

The potential exists for gross pollutants to escape from waste vehicles at the tip face. Mobile litter nets are proposed as part of the development. The nets would completely surround the tipping area, except for a vehicle access point. Therefore the potential for contamination by gross pollutants would be minimised.

Stormwater

The impacts on runoff quality would be mitigated by the progressive rehabilitation and revegetation of exposed surfaces and the implementation of measures to enhance the quality of runoff discharged into the receiving gullies and eventually Wolumla Creek.

Two stormwater ponds have been sized and located so as to treat the runoff from disturbed areas within the site at any given stage of the progressive landfill operations, having regard to the local topography. The size of stormwater ponds was calculated to meet the DECC's *Draft Managing Urban Stormwater: Soils and Construction – Volume 2D – Waste Landfilling* (2007). However in October 2007, the DECC (now OEH) released draft treatment objectives as part of a program of consultation on the *Managing Urban Stormwater: Environmental Targets*. These objectives included:

- 85% retention of the average annual load of total suspended solids (TSS);
- 65% retention of the average annual load of total phosphorus (TP); and
- 45% retention of the average annual load of total nitrogen (TN).

Cardno (2009) used the MUSIC Version 3.0 stormwater quality modelling system released by the Cooperative Research Centre for Catchment Hydrology to estimate the likely quality of existing catchment and probable future runoff. Cardno found from a catchment based water quality assessment that the stormwater pond volumes determined in accordance with DECC's Waste Landfilling requirements would not meet the draft environmental target for retention of TSS. The stormwater ponds were therefore re-sized to meet the draft environmental targets and re-assessed using the MUSIC model. The re-assessed sizes for Stormwater Ponds A and B were 2.25 ML and 0.88 ML respectively.

Table 8.2 of the EIS summarises the average annual effectiveness of the re-sized stormwater ponds in capturing annual runoff and implications for downstream water quality. The assessment was based on modelling 30 years of rainfall data which includes dry, average and wet rainfall years. The stormwater quality modelling examined pollutant levels including TSS, TP and TN.

Table 8-2: Summary of Maximum Average Annual Runoff and Pollutant Loads			
	Inflow	***Outflow***	***% Reduction***
Stormwater Pond A			
Runoff (ML/yr)	*4.19*	*2.09*	*50*
Total Suspended Solids (kg/yr)	*1120*	*170*	*85*
Total Phosphorus (kg/yr)	*2.56*	*0.51*	*80*
Total Nitrogen (kg/yr)	*18.9*	*7.11*	*62*
Stormwater Pond B			
Runoff (ML/yr)	*2.04*	*1.13*	*45*
Total Suspended Solids (kg/yr)	*407*	*74.4*	*85*
Total Phosphorus (kg/yr)	*1.13*	*0.28*	*80*
Total Nitrogen (kg/yr)	*8.22*	*3.61*	*61*

From the above it can be seen that modelling indicates the development will achieve the draft 2007 DECC environmental targets for TSS, TP and TN.

The EIS states that

> *due to the proposed staging of the landfill, including progressive capping and rehabilitation works, the expected stormwater quantity and pollutant loads leaving the site would be less than the estimated loads under pre-landfill conditions during all stages of the waste landfill operation.*
>
> *The treatment sequence proposed, which comprises stormwater ponds, swales and other localised small traps to capture grease and oils, litter, and sediment are expected to further improve upon the draft 2007 DECC environmental target for pollutants* (GHD 2009a:8-6).

4.6.2.2 Surface Water Quantity

The two proposed stormwater ponds were modelled, using 30 years of rainfall data (which includes dry, average and wet rainfall years) to determine average runoff and pollutant loads. The modelling results were provided in Table 8-2 of the EIS, which is replicated above.

Due to the staging of the landfill, the expected stormwater quantity leaving the site would be less than the estimated loads under pre-landfill conditions during all stages of the waste landfill operation.

As part of the water management investigations, an assessment of the peak flows leaving the landfill site was also undertaken for the post operation phase. The assessment found that only a small increase in peak flows would occur, which would be reduced to the existing situation when the proposed management measures, such as revegetation, are undertaken.

4.6.2.3 Flooding

The proposed landfill area drains to four gullies, which flow in a westerly direction to Wolumla Creek, located approximately 30 m below the site.

Modelling undertaken found that the depth of flooding, even for the 100 year flood would be shallow, and, coupled with the relatively low flow velocities, is unlikely to threaten the downstream environment by flooding the landfill area.

The proposed CWF is not expected to have an impact upon flooding downstream of the site for events up to and including the 100 year ARI flood. Additionally, during operation of the proposed facility, less stormwater runoff would be generated due to the isolation of active waste landfill cells from the remainder of the CWF.

Similarly, due to the elevated location of the site, flooding in Wolumla Creek is not expected to impact the site.

The JRPP have subsequently queried whether the recent flood event affected the subject site. The applicant has advised that the site was inspected after the storm events in March 2011 and has not been affected by additional erosion or damage as a result of stormwater runoff. The site was not subject to inundation by flooding during the storm.

4.6.2.4 Groundwater

Landfills that are located in permeable soils and/or with non-existent or poorly constructed basal liner systems may be expected to impact on local groundwater systems via leachate dispersal through underlying soil strata.

Two separate geotechnical investigations have been undertaken on the site by Amaral (2005) and GHD (2008). Both investigations found the weathered granodiorite site soils to be of very low permeability and permanent groundwater is not present at the depth of the proposed excavation. Groundwater would be protected by a combination of site geology and a composite basal liner system. Groundwater monitoring would also be conducted in accordance with an approved LEMP and EPL for the site.

Therefore groundwater would be protected by engineering controls that meet or exceed current guidelines.

4.6.3 MITIGATION MEASURES

4.6.3.1 Surface Water

During Construction

Before and during construction, the following mitigation measures would be carried out to minimise any impact on surface waters:

- Preparation of a Soil and Water Management Plan containing surface water management measures for the duration of the site preparation and construction phases.
- Install sediment basins at nominated locations within the site. Include access for vehicles to remove trapped sediment and gross pollutants and utilise as landfill covering.
- Use stormwater pond as a source of water for dust suppression.

During Operation

A surface water monitoring program to demonstrate that surface waters are not polluted by activities at the CWF would be implemented throughout the operation of the CWF as outlined below.

- sediment basins, drainage lines and sediment/erosion control structures would be monitored, maintained and cleaned at least monthly and following significant storm events;
- stormwater/surface water samples would be collected from drainage lines within the site, the stormwater pond and upstream and downstream within Wolumla Creek on a quarterly basis;
- water samples would be collected from a borehole down gradient from the stormwater pond and analysed for pH, turbidity and electrical conductivity (or other parameters as stipulated by licence conditions and the LEMP); and
- the water level in the stormwater pond would be monitored on a continuous basis to track water level variations and to identify any changes in outflow characteristics for the pond.

The EPA, as the ARA has imposed conditions in its GTAs (and future EPL) for the requirements of surface water monitoring to ensure the development is not causing water pollution.

Post Closure

Surface water monitoring following closure of the site would be set out in the LEMP and Closure/Rehabilitation Plan. Monitoring would provide data on the quality of surface water in order to ascertain trends in water quality and to ensure no observable detrimental impacts from the CWF.

4.6.3.2 Groundwater

During Operation

Monitoring of the groundwater system would be undertaken to provide data on the quality of the underlying groundwater aquifer throughout the operation and closure of the CWF in order to ascertain trends in water quality and to ensure no observable detrimental impacts from operation of the CWF.

Monitoring would identify any correlation between leachate quality and impacted groundwater. Groundwater monitoring during operation of the site would be conducted in accordance with the EPL for the site within the Benchmark Techniques contained in *Environmental Guidelines: Solid Waste Landfills*.

Monitoring of groundwater parameters would include:

- pH and temperature;
- electrical conductivity (EC);
- total dissolved solids (TDS);
- absorbable organic halogens (AOX) – 10 µg/L;
- nitrogen compounds (ammonia (50 µg/L);
- nitrate (100 g/L) and nitrate (100 µg/L);
- chemical oxygen demand (COD);
- biochemical oxygen demand (BOD);
- total organic carbon (TOC) – 50 µg/L;
- alkalinity (bicarbonate, carbonate) – 1,000 µg/L;
- major anions and cations, fluoride – 500 µg/L; and
- metals (total iron, zinc, magnesium and manganese).

The EIS recommends that a groundwater assessment would be undertaken should groundwater monitoring indicate a possible failure of the leachate containment system.

The EPA, as the ARA has imposed conditions in its GTAs (and future EPL) for the requirements of groundwater monitoring to ensure the development is not causing groundwater pollution.

Post Closure

Groundwater monitoring following the closure of the site would be conducted to provide data on the quality of the underlying groundwater aquifer in order to ascertain trends in water quality, and to ensure no observable detrimental impacts from the CWF.

The LEMP and Closure/Rehabilitation Plan would outline the procedure and program for monitoring. Sampling would continue until such time as the landfill poses no risk to the environment and may continue for in the order of 30 years post-closure.

4.6.4 SUMMARY

From the above it can be seen that the proposed development is not expected to result in surface or groundwater pollution. To ensure this, the development will be subject to a regime of surface and groundwater monitoring and reporting, both during operation and post closure of the facility.

The EPA (as the ARA) has issued its GTAs for the EPL. Therefore the proposed development is consistent with the EPA's requirements for surface and groundwater impact and therefore would not result in environmental pollution[6].

It is recommended the mitigation measures outlined above be included in the LEMP for the development, which would be required to be prepared by a condition of any consent granted for the development.

The development (operating with the recommended mitigation measures) is not expected to result in any significant impacts on surface or groundwater.

[6] **Appendix D** outlines the EPA's responsibilities in carrying out its licensing functions, including the issue of GTAs as part of Integrated Development.

Site Selection Process

5.1 INTRODUCTION

The 14 March 2011 Southern JRPP meeting required details of the site selection process and alternate site identification used. The following provides this information.

5.2 CHRONOLOGY

The chronology of events surrounding site selection is outlined as follows:

13 September 1999	A Council meeting was held that resolved to abandon the proposed facility at Jellat Jellat.
18 January 2000	A report was submitted to Council that outlined the proposed strategy for the site selection process of a future landfill facility.
February 2000	Council resolved to advertise for expressions of interest from property owners within the Shire who may have suitable land that could be purchased or leased. These advertisements were placed in local papers in the first week of February 2000.
August 2001	Council adopts 2020 Vision on Waste Strategy.
18 December 2001	Expressions of interest were received by Council. A report submitted to Council recommended that the preferred site for a waste facility was the property situated at Wanatta Lane. A recommendation was made to purchase the land so that more detailed planning, design and environmental investigations could take place. The report also recommended a public meeting be held to inform the community of the proposal.
11 February 2002	Council released a media statement informing the community of the opportunity to learn more about the site purchase.
14 February 2002	A contract for the sale of the land was signed by Council.
19 February 2002	A community meeting was held at Wolumla town hall.
June 2004	A further site selection study was undertaken by Wright Corporate Strategies/Bob Amaral (Appendix B of EIS). Site 15 was selected confirming the preliminary assessment of the site as suitable for use as a waste facility.
December 2005	Council engaged consultants HLA Envirosciences to prepare an EIS for the facility.
March 2007	DA submitted for development of CWF.
March 2008	NSW Department of Environment & Conservation seek a range of additional information and reports regarding the proposed facility. The DA was withdrawn to allow time to prepare additional information and include in a revised and updated EIS.
July 2009	An additional site at Bournda was visited by Bob Amaral. The site adjoins Bournda National Park (along with a number of other flaws) and is therefore excluded from further consideration. Sites at South Pambula and Cobargo Bermagui Rd were reviewed. This review is included in the representations report.
12 November 2009	Development Application submitted for CWF.

5.3 SITE SELECTION PROCESS

5.3.1 INITIAL SECTION STUDY

Wright Corporate Strategy (2004) undertook a study, *Site Selection for Central Waste Facility*, which aimed to

> *select a suitable landfill site as part of an ongoing process to development a centrally located landfill for the long term needs of the Shire* (2004:1).

An initial 45 sites were identified for consideration in this study. The sites were then considered against their location and topographical suitability.

The study methodology initially looked at the determination of the centre of gravity of waste generation for the LGA. It was determined that a preferred location would be within close proximity of the Princes Highway (i.e. ≈ 5km) between Bega and Merimbula.

Several sites were selected from outside this preferred area due to their suitable topography.

A desktop assessment was then undertaken for the originally selected sites. The factors used during this assessment were:

- geology/soils/permeability
- loss of amenity to existing or future residents
- diverse or complex natural flora/fauna habitat
- multiple titles to land
- proximity to permanent water courses/water bodies
- difficult/expensive access and/or development
- landfill cover deficit

These factors became known as the 'fatal flaw' factors.

The desktop review resulted in 35 of the 45 original sites being discarded. The remaining ten sites were then subject to a site inspection. Following the site inspection a further five sites were discarded based on the above fatal flaws.

The five remaining sites were then ranked:

Table 5.1 – Site Selection Summary (Recommended Sites)

Site	Order of Merit	Comments
14	4	Difficult to screen from passing traffic on Wanatta Lane. Little space available to provide thick tree buffer along Wanatta Lane.
15	1	Portion of site (adequate size) could be readily screened from Wanatta Lane
15A	2	Portion of site (adequate size) could be readily screened from Wanatta Lane
16A	5	Difficult to screen from passing traffic on Wanatta Lane. Little space available to provide thick tree buffer along Wanatta Lane. Loss of amenity for existing owner.
16B	3	Loss of amenity for existing owner unless total property purchased. Could possibly be screened by extensive tree plantings.

Source: WCS 2004:4

Test pits were dug at the two preferred locations (15 & 15A). The soil conditions within the two sites were identified as being favourable and

> *because of the available very extensive on site natural buffer to the nearest watercourse (in excess of 1km+) may qualify as a "natural geological liner'* (WCS 2004:6).

The recommended site was Site 15. The report notes that this site does not contravene the Environmentally Sensitive and Inappropriate Areas for Landfilling that are identified in Table 1 of the NSW EPA's *Environmental Guidelines: Solid Waste Landfills* (2006).

Site 15 is the site the subject of this DA.

The site selection process, criteria and selection outcomes were presented to the community at a community meeting held at Wolumla in September and November 2004.

5.3.2 SECOND SELECTION STUDY

A further review of the site selection process was undertaken by Robert H Amaral – Consulting Geotechnical/Landfill Engineer in July 2009. This included consideration of a further two potential sites in addition to those considered by Wright Corporate Strategy (2004), and further consideration of one site (Site 42: State Forest Site – Pambula South) identified in the 2004 study.

The additional sites considered by R H Amaral in 2009 did not change the outcome of the 2004 site selection process. These sites are Cobargo Bermagui Road Quarry and Rob High Property – "Bournda".

Public Forum and JRPP Meeting Issues

6.1 INTRODUCTION

Whilst not part of the formal exhibition period of the DA, the JRPP chose to hold a Public Forum Meeting on 11 November 2010. The purpose of the briefing was to provide an opportunity for the Panel to listen to and understand the key issues and community concerns with the proposal. **Section 6.2** provides a summary of the issues raised at this meeting and how these issues have been addressed.

An initial determination meeting for this DA was held on 14 March 2011. At this meeting opportunity was provided for people to address the panel relating to their issues and community concerns with the proposal. **Section 6.3** provides a summary of the issues raised at this meeting and how these issues have been addressed.

6.2 PUBLIC FORUM ISSUES

The following table provides a summary of the issues raised at the Public Forum Meeting on 11 November 2010 and commentary as to how the issues have been addressed.

Table 6.1 – Public Forum Issues

Speaker	Issue	Comment
David Oates	Property Values	Refer **Section 7.3.1** of this report.
	Inappropriate Location – should be in a forested area	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**. The suitability of the site was considered as part of the DA assessment. This assessment has determined that the site is suitable for the proposed development (refer **Section 9.0**).
	Land acquisition by administrator	The site selection process including timing of Councils purchase of the site is detailed in **Section 5.0** of this report.
	Erosion issues – massive erosion downstream	Section 3.8.1 of the initial determination report demonstrates the site is suitable for the development in terms of geology.
Don Bilton	Property values - stated he has a letter from the Valuer General's office stating that property values could drop by 20% as a result of the CWF. He noted that his property value has already dropped. He strongly disagrees with the EIS statement that property values would not be significantly affected.	Refer **Section 7.3.1** of this report.
	Concerned that local government panel reps were not present	This is not a matter for consideration in the DA assessment. However this section of the addendum report covers the issues raised at the meeting and thus should negate any issues with those panel members being absent at the public forum meeting.
Jeff Smith	Key concern is about ongoing management of the waste facility.	The CWF would be required to operate within the conditions of any consent issued and within the conditions of the EPL. The EPA would be the ARA and thus be responsible for ensuring the development does not cause environmental pollution.

Table 6.1 – Public Forum Issues

Speaker	Issue	Comment
	Believes the proposal does not meet the requirements of the Infrastructure SEPP, with particular reference to the land being Class 3 agricultural land	Compliance with the Infrastructure SEPP is outlined in Section 2.4.3 of the initial assessment report.
	Believes the facility should be located in State forest or a disused quarry	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**. The suitability of the site was considered as part of the DA assessment. This assessment has determined that the site is suitable for the proposed development (refer **Section 9.0**).
	Concern about vermin & contaminates	Section 3.11.3 of the original assessment report demonstrates how vermin would be controlled/managed. As outlined throughout **Section 4.0** of this report, the development would be able to operate without causing pollution from contaminants.
	Believe Council should provide reticulated water to surrounding residents (300 dwellings) to ensure drinking water is not contaminated	As outlined in **Section 4.5** of this report, there were no exceedances in the predicted TSP or PM10 emissions generated by the CWF for any of the sensitive receptors. Consequentially the assessment determined that it was not necessary to model dust deposition rates. Therefore it is not expected that the operation of the CWF would result in contamination of rainwater tanks.
	Concerned about illegal dumping in the area - who will be responsible for collection of such waste	The management of litter is outlined in Section 3.11.2 of the initial assessment report.
	Concerned about illegal disposal of asbestos	The management of asbestos is outlined in Section 3.11.4 of the initial assessment report. There is legislation in place to address the illegal dumping of asbestos.
	Requested the applicant provide details of proposed electricity supply - concerned no studies done of where reticulated electricity is to come from (need for part 5 assessment or EIS)	Refer **Section 3.0** of this report.
	Ensure wildlife corridors are preserved	As outlined in Section 3.10 of the initial assessment report, the development would include rehabilitation of the Lowland Grassy Woodland EEC on site, to further enhance existing wildlife corridors.
	Property values	Refer **Section 7.3.1** of this report.
	Issue of 1% leachate leakage allowance and poor installation.	The Landfill and Leachate Management System would be installed in accordance with: • the Specification prepared by GHD, which is provided in Appendix L of the EIS; and • the Construction Quality Assurance and Testing Program, prepared by GHD and provided in Appendix Q of the EIS.
	Waste to energy, not dry tombing	As outlined in Section 3.9.3.1 of the initial assessment report, the amount of landfill gas generated does not make it commercially viable for recovery and energy generation from the landfill gas.
Wal Mullard	Concerned about ongoing management of the facility	The CWF would be required to operate within the conditions of any consent issued and within the conditions of the EPL. The EPA would be the ARA and thus be responsible for ensuring the development does not cause environmental pollution.

Table 6.1 – Public Forum Issues

Speaker	Issue	Comment
	Leachate concerns	The leachate management system is described in **Section 4.3** of this report, with the potential impacts on water quality outlined in **Section 4.6** of this report.
Kaye Munro	Concerned about property values	Refer **Section 7.3.1** of this report.
David Beck	Concerned the development is within the catchment of Bega River	This is addressed in **Section 5.6** of this report.
	Believes there may be a more appropriate location in State forest land	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**. The suitability of the site was considered as part of the DA assessment. This assessment has determined that the site is suitable for the proposed development (refer **Section 9.0**).
	No body can guarantee 100% performance	Noted. However the development would aim to operate to such.
Lonnie Llewellyn	Believes there are alternative sites – use existing facilities	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**. The suitability of the site was considered as part of the DA assessment. This assessment has determined that the site is suitable for the proposed development (refer **Section 9.0**).
	Called for a class action law suit against council	Not a matter for consideration in the assessment of the DA.
	Concerned about property values	Refer **Section 7.3.1** of this report.
Ben Hobill	Queried who can access the site. Believes the EIS is misleading when it says no public access will be available to the CWF, as anyone with a trailer over 3 cubic metres will be allowed entry to the site. David Basil (for Applicant) clarified this is for commercial waste. Ben submitted that is still the public. Alison McCabe asked whether you needed an ABN to dispose of commercial quantities of waste to the CWF. David Basil was not clear on this point.	The CWF will accept large loads of municipal solid waste and commercial waste delivered by waste collection vehicles. Typically loads would be between 10 and 30 cubic metres. In addition, the facility will accept large loads of mixed waste (typically 15 to 30 cubic metres per load) transferred from Councils existing landfill sites, which are to be converted to waste transfer and resource recovery facilities as per the 2020 Vision on Waste strategy. Mixed demolition wastes delivered in large tip trucks (typically > $10m^3$) may also be accepted at the facility. Small loads transported by utilities, cars, trailers or other vehicles (i.e. “the general public”) will only be permitted to use the resource recovery and transfer station sites (i.e. not the CWF). This is intended to maximise potential sorting and recovery opportunities for small loads, and to minimise total traffic movements and amenity impacts associated with access to the CWF. An ABN is not a prerequisite to dispose of commercial quantities of waste. Companies registered under the Corporations Law and business entities carrying on an enterprise in Australia are entitled to an ABN. Employees and hobbyists are not entitled to an ABN as they are not carrying on an enterprise. ABNs relate to compliance with taxation law. In practice waste disposal or transport businesses accessing the site would normally hold an ABN as they are carrying on an enterprise.

Table 6.1 – Public Forum Issues

Speaker	Issue	Comment
	Visual amenity - Ben's land is listed as a receptor in relation to visual amenity however alleged that no-one from the applicants team or assessing team has ever actually been to his house to make an assessment of visual impact	Section 3.1.2 of the initial assessment report addressed visual impacts. On 28 June 2011 Mr Hobill's property was visited to investigate the sight lines to the subject site. The subject site was also visited to determine views back to Mr Hobill's property. It was determined that there would be minimal views of the infrastructure associated with the proposed development. Due to the topography of the subject site, the tipping face would not be visible. Further by the time cell 6 was active (the one closest to Wanatta Lane), the boundary tree plantings would be well established to provide further screening of the site from Mr Hobill's property.
	Believes there is not enough detail about wind blown litter management	Windblown litter would be managed as outlined in Section 3.11.2 of the initial assessment report.
	Concerned about contamination/ingestion to livestock	Windblown litter would be managed as outlined in Section 3.11.2 of the initial assessment report.
	Believes the process is cost driven and not environmentally driven. The land was purchased before alternative sites were considered.	The site selection process including timing of Councils purchase of the site is detailed in **Section 5.0** of this report.
	Stated a leachate spill is inevitable and the cost of clean up has not been considered	A risk assessment for leachate contamination has been undertaken and is presented in **Section 4.6.2.1** of this report.
	Concerned about who is responsible for waste clean up on route to the CWF	The management of litter is outlined in Section 3.11.2 of the initial assessment report.
Warren Page	Concerned about amenity impacts	This is addressed in Section 16.0 and 17.0 of the EIS. The proposed development can achieve all relevant amenity criteria, and thus is not expected to result in adverse amenity impacts for the locality
	Wants to see an action plan for spill incidents	As outlined in Section 24 of the EIS, an Emergency Response Procedure would be implemented as part of the LEMP that details the measures to be taken in the case of an emergency such as a spill.
	Stated he believes compliance with government guidelines is not always good enough	Government guidelines are those which the development is bound to operate within.
	Wants to be assured that adequate overflow for stormwater management and leachate management is available	This is demonstrated in **Section 4.6.2.1** of this report.
	Concerned about impacts on the water catchment	This is addressed in **Section 4.6.2.1** of this report.
	Believes the development minimises future potential for economic development in the area (including light industrial)	The locality is zoned for rural development. There is no proposal for light industrial development in the area. The draft Bega Valley LEP 2010 does recognise the nearby airstrip function through proposed zoning of SP 2 Air Transport Facility however the proposed waste facility is not likely to affect the continued functioning of that facility.
Gerry MacNeil	Submits the site is not right for the development	This assessment has determined that the site is suitable for the proposed development (refer **Section 9.0**).

Table 6.1 – Public Forum Issues

Speaker	Issue	Comment
	States there cannot be a guarantee that there won't be a leachate spill	**Section 4.6.2.1** of this report demonstrates there is a remote chance of a leachate spill.

6.3 DETERMINATION MEETING ISSUES

The following table provides a summary of the issues raised at the Initial Determination Meeting on 14 March 2011 and commentary as to how the issues have been addressed.

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
Mayor Tony Allen (BVSC)	Spoke in support of the development on behalf of the Applicant	N/A
Andrew Constance MP	Addressed the panel against the development	N/A
	Concerned the site contains floodplain wetlands	The north western corner of the site abuts Wolumla Creek. Therefore this part of the site is likely to be affected by flooding. **Section 4.6** of this report addresses the impacts of the development on water quality.
	Concerned there was no response from NSW Health	NSW Health was provided with an opportunity to comment on the DA.
	Submits other sites should be explored	As outlined in **Section 5.0**, Council undertook a site selection process. The subject site was determined to be the most suitable site.
Mrs C Dewaegeneire	Soils unsuitable. Erosion and slip prone	Section 3.8 of the original assessment report illustrates the site is suitable in terms of soils and geology.
	Site is above a floodplain wetland	Noted. However **Section 4.6** of this report demonstrates the development is not expected to have an adverse impact on such.
	Intense rainfall events. Which occur during summer and create enormous runoff.	**Section 4.6** of this report outlines that the assessment documents have considered such and demonstrated that the development can withstand such events.
	Several sites were initially rejected due to access costs.	Noted.
	Landowners have not been approached for road widening land acquisition	There will be no private land acquisition required as a result of the Wanatta Lane upgrade.
	Loss of trees for road upgrade.	The REF concludes that road upgrade would not have a significant impact on flora, fauna or their habitats.
	Cost of the road upgrade.	This is addressed in **Section 2.5** of this report.
	Safety of remaining unsealed section of Wanatta Lane.	The road design would be undertaken in accordance with relevant criteria, thus providing a safe transition between road standards. Further, drivers should drive to the appropriate road conditions. The change in road would be appropriately signposted.

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
	Heritage significance of Ayrdale.	The impacts on the heritage significance of Ayrdale were outlined in Section 3.4.2 of the original assessment report. It determined that the development would not adversely impact on such.
	Concern of bias of councillors and NSW government employees wanting the facility regardless.	The Southern Region JRPP is determining the DA. Therefore these people would have no influence on the decision making process.
Ian Gordon	Inadequate site selection process	The site selection process is outlined in **Section 5.0**.
Don Bilton	Concerned about property values	The impact of the development on property values is provided in **Section 7.3.1**.
Jeff Smith	The development is not in the public interest.	The matter of public interest was addressed in Section 6.0 of the original assessment report.
	Construction of a waste facility that's design is obsolete by world standards	The development can achieve the relevant environmental criteria as outlined throughout this report and the original assessment report. Thus the facility is not considered to be obsolete.
	Uses technologies already out of step with today's thinking	
	Keep spending money on trying to make this site fit the criteria when a more appropriate site could be found	As outlined in **Section 5.3** the site was chosen through a site selection process which identified it as the best site for the proposed development.
	Construct a waste facility in a defined water catchment area	**Section 4.6.2** demonstrates the development has a remote chance of impacting on the drinking water catchment.
	Cause hardship to people living in close proximity to the waste facility	There is no evidence that this would occur.
	Potentially damaging health of those residents surrounding the facility	The proposed development meets all relevant environmental criteria as illustrated throughout **Section 4.0** of this report. Therefore the development is not expected to damage the health of residents surrounding the facility.
	Potentially creating a major health situation to a town's drinking supply	**Section 4.6.2** demonstrates the development has a remote chance of impacting on the drinking water catchment.
	Create a situation where jobs may be lost due to water contamination	**Section 4.6.2** demonstrates the development is unlikely to cause water contamination.
	Have a situation where the council is paying for expensive litigation.	This is not a matter for consideration in the DA assessment.
	Lose the Wanatta Lane wildlife corridor and ecosystem	The REF concluded that the road works would not have a significant impact on flora, fauna or their habitats.
	Have windblown litter strewn around the countryside	Litter would be appropriately managed as outlined in Section 3.11.2 of the original assessment report.
	Have contamination of the local agricultural industry	The development is not expected to result in any off-site contamination.
	Be losing property values for those surrounding the CWF	This is addressed in **Section 7.3.1** of this report, which demonstrates an unlikely significant impact.

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
	Have Wolumla seen as the place for all unwanted infrastructure in the shire	There is no basis for this comment. This is not a matter for consideration in the DA assessment.
	Have possible contamination of the fisheries	**Section 4.6.2** demonstrates the development is unlikely to cause water contamination.
	Have further loss of agricultural land	The development would not result in the loss of agricultural land, as outlined in Section 3.5.1 of the original assessment report.
	Create an environment where the population growth of vermin is expected when so many are dependent on potable water from their own facilities.	Vermin would be managed as outlined in Section 3.11.3 of the original assessment report.
	Have a community which will be in constant conflict with its council for the duration of the facility's operation.	This is not a matter for consideration in the DA assessment.
	Reduce living standards and lifestyle opportunities for its residents.	There is no evidence this will occur as a result of the development.
	Negatively impact so many residents with so little care and concern	The proposed development would provide a clear net benefit for the residents of the BVS LGA.
	All tip liners fail eventually	As outlined in **Section 4.6.3.2**, the development is not expected to result in groundwater pollution.
	Is it in the public interest that future generations will have to bear the financial, environmental and health burdens of this poorly conceived and planned development	As outlined throughout this report and the original assessment report, the development is not expected to result in adverse environmental or health impacts. The development has been long planned and budgeted for by Council.
Wal Mullard	Proximity of leachate dams to Bega's main water catchment	**Section 4.6.2** demonstrates the development has a remote chance of impacting on the drinking water catchment.
	Storage of leachate for several years until treatment. Heavy rain during this time could result in overflows to water catchment.	**Section 4.6.2.3** of this report demonstrates that the development can withstand significant rainfall events.
	Litter – no details provided of proposed litter net other than generic.	Litter would be appropriately managed as outlined in Section 3.11.2 of the original assessment report.
	Litter – existing Merimbula tip demonstrates adverse litter impacts	Litter would be appropriately managed as outlined in Section 3.11.2 of the original assessment report.
	Site selection - site is highly exposed and elevated – no established tree barrier for litter containment.	As outlined in **Section 5.0**, the subject site was chosen as the best site as part of the site selection process.
	Practicalities of collecting windblown litter from private properties.	Negotiations would be undertaken with landowners to determine the best means for access for collection of any windblown litter on their properties.
	Cumulative effects on local amenity and agriculture	As outlined throughout **Section 4.0** of this report, the proposed development would comply with relevant environmental criteria. Thus not adversely affecting local amenity. Further, as outlined in **Section 8.2.2.2** the development would not have an adverse impact on agriculture.

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
	Visual impact and the perceived tourist image of the shire.	As outlined in Section 3.1 of the original assessment report, the development is not expected to have an adverse visual impact.
Jennine Childs	No way that any leachate pond would have been able to hold its contents during the Feb 2009 rain event – believe it was a 1:100 year event.	**Section 4.6.2.3** of this report demonstrates that this can be achieved.
	Leachate has the potential to contaminate the shire's drinking water	**Section 4.6.2** demonstrates the development has a remote chance of impacting on the drinking water catchment.
	No contamination remediation plan in the EIS	**Section 4.6.2** demonstrates the risk of the development impacting on the drinking water catchment is remote. Further the overall consequence of likely type of contaminants entering local drinking water is minor. With the overall risk level for local residents being negligible.
	No fire hazard or evacuation plan	A Fire Management Plan/Procedure would be prepared as part of the LEMP, as outlined in Section 24 of the EIS.
	No water on site to fight a fire on site	As outlined in the original assessment report it is not possible to predict or model actual requirements for fire fighting water supplies. The Rural Fire Service has not raised any objection of the proposed water supply for fire fighting.
	Totally unacceptable risk putting a landfill near a water supply	**Section 4.6.2** demonstrates the development has a remote chance of impacting on the drinking water catchment.
	Dust and airborne pollutants will cause pollution of the tank drinking water	**Section 4.5.3** demonstrates the air quality at the nearest residential receptors would well within environmental guideline requirements.
	Cattle exposed to contaminated drinking water and feed.	The risk to domestic animals and livestock from stormwater runoff is not expected to be significant due to the stormwater and leachate control and monitoring measures proposed in Section 5 of the EIS. These measures include: composite lined landfill cells and leachate dams; progressive capping and rehabilitation; leachate treatment; stormwater control ponds, and both ground and surface water monitoring programs. This would ensure leachate and/or contaminated water would be contained within the site and would not impact the drinking water used for stock on neighbouring properties. Litter management and control methods are identified in Section 5.14.3 of the EIS and include the use of mobile nets and litter patrols. Containment of litter on site would minimise the potential for stock or produce to ingest litter. The identified mitigation measures would be implemented as part of the LEMP.
	Affected our lifestyle for the last 9 years.	This is not a matter for consideration in the DA assessment.
Jeff Knight	Concerned about significant tree loss in Wanatta Lane	The impact assessment undertaken for the Wanatta Lane upgrade determined there would be no significant impact as a result of the loss of the trees. Additional planting in the road reserve would be undertaken.
	Will there be a weighbridge at the CWF site?	Yes

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
John Dawson	Believes the site is suitable for proposed CWF	Noted
Rob Webb (on behalf of David Oates)	Consultation process to date has not balanced an assessment of affected land owners' issues, but rather focussed primarily on the matters viewed from the perspective of the proponent.	The responses to the submissions have been provided in an objective manner based on the information provided in the DA documents.
	Plastic bag impact on bovine animals	This is unlikely to be an impact providing the proposed measures to avoid windblown litter are correctly managed. See Section 3.11.2 of the original assessment report.
	Feral animals and pests. Spread disease and decimate dung beetles.	Vermin would be managed as outlined in Section 3.11.3 of the original assessment report.
	Loss of trees on Wanatta Lane will reduce windbreak on ridge crest.	The trees on the southern side of the road will be retained, and the gaps planted out to provide improved connectivity.
	Social Impact – court ruling for a STP – depreciating the money value of the farm.	The social impact of the development on the locality has been considered in **Section 7.2** and **7.4** of this report.
	Traffic studies must include future local growth. 36% increase in next 25 years	The RTA's *Guide for Traffic Generating Development* provides details of the matters to be included in traffic impact studies. It does not require consideration of future traffic growth.
	Noise impacts from trucks and reversing alarms	This is addressed in **Section 4.4** of this report. The development complies with the guidelines for relevant noise criteria.
	Dust from the open tip face	This is addressed in **Section 4.5** of this report. The development complies with the guidelines for relevant particulate criteria.
	Odour impacts	This is addressed in **Section 4.2** of this report. The development complies with the guidelines for relevant odour criteria.
	Drainage – from Wanatta Lane – will increase runoff and potential for surface water erosion on Wanatta.	As outlined in the REF, the table drains adjacent to Wanatta Lane (once upgraded) would be sufficient to cater for the runoff generated by the road.
	Identifiable nexus between acquisition of land and development of the CWF – compensation under just terms	This is not a matter for consideration in this DA assessment.
	Should be put in a State Forest, like Port Macquarie.	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**.
David Beck	Concerned about systems failure	A risk assessment for the development in terms of pollution of water supply. It is provided in **Section 4.6.2.1** and determines there is a remote chance of impacting on drinking water supply.
Kay Munro	Concerned about water quality	This is addressed in **Section 4.6**
Beth Smith	Believes this is not the appropriate site for a CWF	As outlined in **Section 9.1**, the assessment concludes the subject site is suitable for the proposed development.
Ben Hobill	No risk assessment	A risk assessment was done for likely pollution of the drinking water supply. It is summarised in **Section 4.6.2.1** which demonstrates the development has a remote chance of impacting on the drinking water catchment.

Table 6.2 – Initial Determination Meeting Issues

Speaker	Issue	Comment
	No guarantee that a spill won't occur	Noted.
	The precautionary principle needs to be applied	The EIS considered the ESD, including precautionary principle.
Perry Wittig	Believes Council should be developing a total resource recovery solution	As outlined in Section 6.2.1.1 of the original assessment report, Council is looking to improve its waste diversion levels.
	Development is not in the public interest	This was addressed in the original assessment report. It was determined that the development is in the public interest.
	No inter-generational equity	The EIS considered the ESD, including intergenerational equity.
	The true economic cost of land filling needs to be known	This was addressed in the EIS as part of the consideration of ESD and improved valuation, pricing and incentive mechanisms.
John Boulton	Wanted more information about the site selection and land purchase by Council	The site selection process including timing of Councils purchase of the site is detailed in **Section 5.0** of this report.
	Concerned about the appropriateness of the site.	As outlined in **Section 9.1**, the assessment concludes the subject site is suitable for the proposed development.
Georgina De Suza	Concerned about impact on lifestyle	The proposed development is not expected to impact on lifestyle. The development would achieve all relevant amenity criteria. Whilst a small increase in the level of traffic on Wanatta Lane would occur, the development would also result in the provision of a sealed road, thus reducing dust and improving amenity as a result.
Anne Franks	Queried whether Panel had received copies of all submissions	All submissions received during both public exhibition periods were forwarded to the Panel for review

6.4 OTHER LATE SUBMISSIONS

The following table outlines other submissions that were received in relation to the proposed development.

Table 6.3 – Other Late Submissions

Author	Issue	Comment
Jake Anderson	Consequences of failure on the drinking water supply appear to have been glossed over	Impacts are addressed in **Section 4.6**
	No formal risk assessments done for the impact on the drinking water supply	A risk assessment was undertaken is it provided in **Section 4.6.2.1** of this report.
	Almost criminal to allow the development to proceed in this location when alternate locations are so readily identified	The site selection process (as outlined in **Section 5.3**) determined this site to be the most suitable of all considered.
	The engineering done on this development is not of a standard commensurate with the risks involved.	The assessment shows the development can meet all relevant environmental criteria. OEH has issued its GTAs for the EPL.
Warren Page	The tip site was purchased without any technical assessment or public involvement.	Alternative sites were considered as part of the site selection process as outlined in **Section 6.0**.
	The later investigation of alternative tip sites was severely restricted by the purchase of the site.	

Table 6.3 – Other Late Submissions

Author	Issue	Comment
	The current tip design based on a 1:25 year guideline. We can't risk pollution of our water supply.	**Section 4.6** of this report outlines that the assessment documents have considered such and demonstrated that the development can withstand major rainfall events.
	The site is unstable, with history of subsidence, slumping and subsoil instability	Section 3.8 of the original assessment report illustrates the site is suitable in terms of soils and geology.
	Earthquake activity – Bega is a risk area with a fault line nearby. Risk of fracturing the tip and releasing pollutants into the water supply.	This was not raised by the DG as a matter for consideration in the EIS. It is not prescribed in any other guidelines as a matter for consideration.

Economic & Social Impacts

7.1 INTRODUCTION

The Southern JRPP, at its meeting of 14 March 2011, required details of the social and economic impacts of the development to assist assessment of suitability of the site.

The applicant has provided further information (AECOM 2011) in relation to this matter as a response to the above, in addition to the consideration given in Sections 17 and 19 of the EIS and Section 2.7 of the Representations Report. This information is provided below.

7.2 SOCIAL IMPACTS

Issues raised by the community during the community consultation process (see Section 7.3 of the EIS) and exhibition (see Representations Report) and which relate to a perceived social impact as a result of the proposal are addressed in the following sections.

7.2.1 LAND USE

Community representatives felt that the introduction of a CWF in the local area would impact upon adjacent land uses.

The EIS found that the construction of the proposed CWF would temporarily result in a loss of agricultural land; however this is not likely to have a significant effect on agriculture within the region. Furthermore, the need for a new waste facility within BVSC is considered to outweigh impacts associated with the loss of a small parcel of agricultural land.

Upon decommissioning of the CWF, rehabilitation would be undertaken in accordance with the final LEMP, which would render the land once more available for rural/agricultural pursuits.

7.2.2 TRAFFIC

The development of the proposed CWF would result in a re-direction of trucks from current landfills to the proposed CWF, which may impact upon residences situated close to roads leading into the area.

The traffic modelling undertaken indicated that there would be only a minor traffic increase on Wanatta Lane and the Princes Highway. However this would have little impact on the performance of the Princes Highway/Wanatta Lane intersection as both roads have sufficient capacity for greater traffic volume.

The proposal includes widening the Wanatta Lane to include 1m wide shoulders, sealing the surface of the road and designing for a 60 km/h speed environment. These measures are designed to improve overall road safety for drivers and would subsequently result in greater safety for pedestrians due to wider road shoulders. Improvements to the roadway would provide drivers with a road surface that provides better driving conditions and improved sight distances.

A Transport Code of Conduct would be developed and would include requirements and protocols for drivers of vehicles associated with the proposed CWF to operate their vehicle in a suitable and safe manner. This includes driving in accordance with the conditions (i.e. in times of fog, rain or other adverse weather conditions) known to occur in the vicinity, deliveries to occur outside of school bus route and adherence to speed limits. Any complaints received from road users would be dealt with promptly and the appropriate action taken.

7.2.3 PROVISION OF LANDFILL SPACE

The proposed CWF would result in the provision of new landfill space, as a part of the BVSC's *Waste Management and Minimisation Plan*. The current landfill sites would be waste transfer stations as identified by the Waste Management and Minimisation Plan and become a tool for reducing waste and re-using resources that would otherwise be treated as waste.

7.2.4 AMENITY

The proposed CWF may have some impact on the amenity of the local area. However dust, odour and noise emissions from construction and operation of the CWF fall below the nominated DECCW emissions criteria. Traffic impacts would be minor as discussed above and the potential for the proposal to impact upon the visual environment would be limited to the' visibility of activities involved in site preparation, construction of the CWF and associated facilities and various stages of landfilling.

The assessment concluded that the visual impact of the proposal once in operation, would be limited to relatively few viewpoints and vegetative screening would reduce the impact to these viewpoints.

Actions to mitigate potential impacts on amenity have been identified including:

7.2.4.1 Dust

Whilst the predicted dust emissions are not expected to impact surrounding properties, environmental management and mitigation measures would be implemented as described in Section 24 of the EIS and the final LEMP. These include the use of a water truck and misting sprays to suppress dust on the active areas of operation, as well as a wheel wash station to minimise dust from truck movements and the establishment of chain link fencing surrounding the site with mesh screening (construction). In addition, regular inspections along the site boundary would be undertaken to monitor and identify any significant dust sources.

7.2.4.2 Odour

Whilst the predicted odour emissions are not expected to impact surrounding properties, environmental management and mitigation measures such as the daily application of cover over waste materials (thereby minimising the opportunity for odorous emissions at night), an odour audit and odour register program would be implemented to minimise and monitor odour emissions. Mitigation measures are described in Section 9.7 of the EIS and would be included in the LEMP.

Should odour complaints be received during the commencement of operation of the CWF, further options for assessing and mitigating odours should be considered, such as the modification of operational activities to minimise the potential for the generation of odours.

7.2.4.3 Noise

Noise generated by construction, operation and road traffic associated with the proposed CWF complies with the specified noise criteria at all of the residential assessment points during both worst case operating scenarios presented in the EIS.

However in order to minimise any potential impacts from noise emissions during construction and operation of the proposed CWF, the following environmental safeguards would be implemented:

Use of the quietest plant and equipment (as well as silencing devices where possible) during construction and operation as well as standard daytime construction and operation hours. During construction of the Wanatta Lane upgrade, residents would be advised of the works schedule (standard hours) and be provided with contact details for reporting concerns throughout the road upgrade works; any complaint would be investigated with appropriate remedial action taken as necessary.

7.2.4.4 Visual

Windblown litter would be controlled by a combination of physical barriers and operational controls including landfill perimeter fencing, mobile litter nets (refer to Figure 15.11 of the EIS), minimising the size of the active tipping face of the CWF, and the daily application of cover over waste materials. Litter patrols would be conducted on a daily or as needed basis to ensure the physical barriers are effective and to collect windblown litter. Vegetation screening would also provide an important role in litter control.

Litter management and control would be included in the LEMP prepared in accordance with the Environment Protection Licence. The LEMP would be updated if required to incorporate further management measures should the proposed measures be limited in success.

Local native species proposed to be used to screen operations would serve to obscure the CWF from most vantage points and reduce the visual impact for passing users on Wanatta Lane.

7.2.4.5 General

Site management contact details would be clearly signposted at the entrance to the site and the site would be fully secured and locked whilst not in operation.

7.2.5 HEALTH

The health of the local community and the physical environment are of utmost importance and management measures such as pest and vermin control would ensure the CWF is managed safely and efficiently.

Management measures for pest and vermin are outlined in Section 21.3 of the EIS and include the application of daily cover, maintenance of a small working face and compaction of waste. Minor pest problems would be dealt with by site personnel or a specialist firm of exterminators if required.

Pest deterrent measures including the regular covering of waste, use of dispersion tools (such as horns, gas cannons) and mobile litter netting would be included in the LEMP and adaptive measures would be adopted where necessary.

The LEMP would also include a monitoring program for pest species to ensure pest deterrent and control programs are effective.

Members of the community expressed concern with regard to the potential for dust to be deposited in rainwater tanks and potential for contamination of drinking water. The EIS and Representations Report found:

> *Due to the distances between the site and potential receptors, deposition into tanks used for drinking water is not expected to be a cause for concern. This is because most dust that may deposit onto a residential roof (and subsequently be washed into a tank) will fall out close to the point of generation.*
>
> *Dust that doesn't deposit close to the emission source will typically be of a size that doesn't readily deposit i.e. PM_{10}, which typically behaves more like a gas than a particulate and can travel significant distances before settling out. The impact of dust on off site dams and roofs is therefore unlikely to be significant.*

The air quality assessment detailed in Section 9 of the EIS concludes the proposed CWF would not exceed PM_{10} guidelines criteria and therefore development is taken to be compliant with environmental and human health goals.

Dust mitigation measures would be employed as discussed above.

7.3 ECONOMIC IMPACTS

7.3.1 PROPERTY VALUES

Sections 17.4.3 of the EIS and 2.7.3 of the Representations Report discuss the potential impact of the proposal on property prices. In relation to the proposal the analysis found:

The proposed CWF may have a perceived impact on property values in the area, but there is unlikely to be a quantitative significant impact on property values. Due to the absence of available Australian literature on potential property impacts as a result of the development of a landfill, the EIS quoted an overseas study (Reichert et al., 1992) which is recognised and has been widely referenced in other research, making it a reputable study to use in the analysis of the proposed CWF on property values.

The study found that whilst negative impacts on market value are historically experienced in major metropolitan areas, dependent on distance from landfill, negative impacts on property value in predominantly rural areas are generally minimal to nonexistent. Significant effects on property values of the main township of Wolumla are not expected.

One study completed by the University of Queensland (Xu, Rudolf, and Greenfield, *Measuring the Environmental Cost of a Landfill*, University of Queensland, MODSIM2005 International Congress on Modelling and Simulation, 2005) summarises methods that could be used to correlate the relationship between property values and landfills. However, the study acknowledges “it is very difficult to assess the full costs of [environmental and social] impacts accurately”. The study does not take into account landfill design, best management practices and mitigation measures. No other reputable studies have been undertaken with regards to Australian landfills and their relationship with property values and as such no Australian studies have been cited.

In addition research points to the large number of variables used to determine the impact of a landfill on property prices including:

- Design features of the landfill, including its physical profile, volume and nature of waste handled and other site characteristics;
- The introduction of new infrastructure such as a new or improved access road, utilities, drainage etc (built in conjunction with the landfill) (some research found this can stimulate additional development);
- A well designed landfill, built and operated to modern standards can be a good neighbour and have no statistically negative impact on surrounding property values (Bleich, Findlay, and Phillips, “An Evaluation of the Impact of a Well-Designed Landfill on Surrounding Property Values” in *The Appraisal Journal* (April 1991);
- Nature of housing for sale - size of lot, number of rooms, internal layout, condition of building and so on;
- Location, siting and position;
- Size of sample and comparability of landfills considered; and
- Local, regional, national and even global economic variables.

It is noted that worldwide, there is little empirical research available into the effects of landfills on house prices. Research suffers from small sample sizes and limited interpretability.

7.3.2 EMPLOYMENT OPPORTUNITIES

The proposed CWF would only result in the creation of a few jobs sourced locally and provide minor indirect benefits within the local economy.

7.4 SUMMARY

From the above it can be seen that the proposed development will result in both some positive and negative social and economic impacts in the locality.

7.4.1 SOCIAL

As defined by the NSW Government Office on Social Policy, social impacts are significant events experienced by people as changes in one or more of the following are experienced:

- peoples' way of life (how they live, work or play and interact with one another on a day-to-day basis);
- their culture (shared beliefs, customs and values); or
- their community (its cohesion, stability, character, services and facilities).

The proposed development is unlikely to have an adverse impact on people's way of life. From the assessment of impacts of the development throughout this section of the report it can be seen that the development can be appropriately managed to ensure that the development would not generate significant adverse impacts that would impact on people's way of life.

The proposed development is unlikely to have an adverse impact on people's culture. Further, the development is unlikely to have an adverse impact on the community's cohesion, stability, character, services or facilities.

In terms of social impacts, based on the above assessment, the proposed development is not expected to result in any significant adverse impacts.

7.4.2 ECONOMIC

In terms of economic impacts, it can be seen from the above that providing the proposed development is appropriately managed (i.e. in accordance with its EPL, consent conditions, and mitigation measures) it is not expected to result in any significant adverse economic impacts in the locality, and in particular in terms of property values.

Legislative Matters

8.1 INTRODUCTION

The following matters seek to provide additional information and/or clarification of matters considered in the assessment of this application, in addition to those detailed in the original assessment report.

8.2 MATTERS FOR CONSIDERATION

The following additional matters are required for consideration as part of the development assessment pursuant to Section 79C(1)(a)(i) and (ii) respectively.

8.2.1 SEPP 55 – REMEDIATION OF LAND

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) provides for a State wide planning approach to the remediation of contaminated land. As part of the Director General's (DG) Requirements for preparation of the Environmental Impact Statement (EIS) for this DA, the following was required:

> *Provide details of site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination, for example if the site was previously a landfill site or if irrigation of effluent has occurred.*

Clause 7 of SEPP 55 outlines the requirements for consideration of contamination and remediation in determining DAs:

(1) A consent authority must not consent to the carrying out of any development on land unless:

- *(a) it has considered whether the land is contaminated, and*
- *(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- *(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.

(4) The land concerned is:

- *(a) land that is within an investigation area,*
- *(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
- *(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land:*

(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

The EIS states the site has been previously been used for agricultural purposes, and in particular grazing:

> *Historically, the land was part of a larger cattle property which has been used for at least 100 years for livestock grazing. In later years the land was colonised by exotic weed species due to land management practices. Since the purchase of the land by Council in February 2002, livestock grazing largely decreased, and the land has remained vacant with minor revegetation, weed management and rehabilitation works undertaken by Council* (AECOM 2009a:2-2)*.*

Table 1 of the *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land*, being the contaminated land planning guidelines referred to in clause 7(4)(b) of SEPP 55 lists agriculture as an activity that may cause contamination.

The applicant has provided the following information in relation to this:

> *The site is located in a rural area predominately used for livestock grazing with scattered rural residences. The nearest residence is some 900m north of the proposed development footprint located within the north-east portion of the property.*
>
> *Historically, the land was part of a larger cattle property which has been used for at least 100 years for livestock grazing. In the latter years the land was colonised by exotic weed species owing to poor land management practices. Since the purchase of the land by Council in February 2002, livestock grazing largely decreased, and the land has remained vacant with minor revegetation, weed management and rehabilitation works undertaken by Council.*
>
> *The field survey undertaken as part of the Non Heritage Archaeological Assessment identified no historic heritage items within the study area. The locally listed Ayrdale Dairy Village is situated under 1 km to the north west. An unlisted derelict house, formerly occupied by the Lord family who worked on the Ayrdale dairy in the early 1900s, is located 200 m north of the proposed leachate ponds.*
>
> *It was noted that a prior heritage assessment carried out in 2007 suggested that a historic cattle yard structure was located within the CWF area; however, the yard located within the CWF is in fact a relatively modern structure. The older yard pictured in the original 2007 heritage report is located near the Lord family house and outside of the study area.*
>
> *No evidence of historical archaeological deposits was identified in the form of old plantings, ground irregularities or ruins.*
>
> *AECOM considers that given the lack of historical heritage items on the site and the use of the land for grazing, it is unlikely that the land has been contaminated from past agricultural practices. We consider that the requirement for a contamination investigation is not warranted, considering Council is proposing to convert agricultural grazing land to landfill, as well as the minimal risk of mobilising soil and sediments (including potential contaminants).*

Based on the above, the land is considered to be suitable for the proposed land use.

8.2.2 DRAFT BEGA VALLEY LEP 2010

8.2.2.1 Introduction

The Draft Bega Valley LEP was placed on public exhibition on 18 April 2011 until 8 July 2011. As the draft instrument has been the subject of public consultation, it becomes a matter for consideration under Section 79C(1)(a)(ii) of the EP&A Act.

8.2.2.2 Zoning

Clause 2.3(2) requires:

> *The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.*

The subject site is proposed to be zoned RU1 Primary Production under draft Bega Valley LEP 2010. The proposed development is defined under the draft LEP as a 'waste or resource management facility'. The proposed development is not listed in the zoning table as a use that is permitted either without or with consent and as such is a prohibited development under the LEP. However, Clause 121 of the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) enables such development to be carried out in the RU1 zone. This permissibility is addressed in the original assessment report. As SEPPs prevail over LEPs, the proposed development remains permissible with consent.

The objectives of the RU1 zone are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To encourage other forms of development, including tourism, that are compatible with agricultural activities and protect the environmental and cultural amenity of the zone.*
- *To maintain and protect the scenic values and rural landscape characteristics of the zone.*

Whilst the proposed development is not a primary industry, it would not prohibit or adversely impact upon other primary industries in the area.

As outlined in the original assessment report the development would impact on an area of 9ha of prime agricultural land. This equates to 0.009% of the prime agricultural land supply in the LGA. The development would not adversely impact on the productive potential of the remaining prime agricultural land on site or in the vicinity of the site. Following closure of the facility, the EIS has identified that the site "is likely to be a productive rural use such as grazing" (AECOM 2009:5-39). Therefore it is not considered that the development would result in fragmentation or alienation of resource lands.

As outlined throughout this report, the proposed development is expected to achieve all relevant benchmark criteria in terms of environmental pollution, including air quality (odour and particulate), noise, and water quality. Providing the development is operated and managed in accordance with its Environmental Protection Licence (EPL), mitigation measures and any consent conditions, it is not expected to result in land use conflict. The document *Living and Working in Rural Areas: A Handbook for Managing Land Use Conflict Issue on the NSW North Coast* (Learmonth, Whitehead, Boyd & Fletcher 2007) provided guidance for land use planning to avoid land use conflict in rural areas. Whilst it was written for the North Coast of NSW it would be similarly applicable to the Bega Valley. In relation to waste facilities, it suggests a separation distance of 300m between the waste facility and rural settlements, residential areas and urban development. There are no dwellings within 300m of the proposed waste facility. This guideline further demonstrates that the development is not expected to result in land use conflicts.

The proposed development is not considered to be incompatible with agricultural activities in the locality, as it would not result in adverse off site impacts that would impact on other agricultural activities in the locality.

Section 3.1 of the original assessment report demonstrates the development would not adversely impact upon the scenic values and rural landscape characteristics of the zone.

8.2.2.3 Heritage Conservation

The subject site is located adjacent to Ayrdale Dairy Village, which is listed as a heritage item (I187) under the Draft LEP. Clause 5.10 of the draft LEP addresses heritage conservation. Specifically the objectives of this clause are:

> *(a) to conserve the environmental heritage of [Name of local government area or other relevant name],*
>
> *(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
>
> *(c) to conserve archaeological sites,*
>
> *(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.*

In assessing the impact of the proposed development on the adjacent heritage item, clause 5.10(5) of the draft LEP enables council to:

> *before granting consent to any development:*
>
> *(a) on land on which a heritage item is located, or*
>
> *(b) on land that is within a heritage conservation area, or*
>
> *(c) on land that is within the vicinity of land referred to in paragraph (a) or (b),*
>
> *require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.*

It is considered that a heritage management document is not required given that heritage impact has previously been adequately addressed in the form of the assessment within the EIS and its appendices. As outlined in the original assessment report the heritage item will not be impacted either directly or indirectly by the proposed development. Further it was noted there will be no impact to the visual setting of Ayrdale due to the distance and landform separation from the CWF (Geolyse 2011:27).

Thus it is considered that the proposed development would not be inconsistent with the objectives of this clause.

8.2.2.4 Biodiversity (Terrestrial)

The subject site contains land identified on the *Natural Resource – Biodiversity Map Sheet NRB_011*, specifically 'significant vegetation'. Clause 6.2 of the draft LEP states:

> *(3) When assessing a development application, the consent authority must consider potential adverse impacts from the proposed development on:*
>
> *(a) the condition and significance of the vegetation on the land and whether it should be substantially retained,*
>
> *(b) the importance of the vegetation in that particular location to native fauna,*
>
> *(c) any potential to fragment, disturb or diminish the biodiversity values of the land, and*
>
> *(d) the condition and role of the vegetation as a habitat corridor, and any proposed measures to minimise or mitigate those impacts*
>
> *(4) Before granting consent to development to which this clause applies the consent authority must be satisfied that:*
>
> *(a) the development is sited, designed and managed to avoid potential adverse environmental impacts, or*
>
> *(b) where an impact cannot be avoided, and having taken into consideration feasible alternatives, the proposed design, construction and operational management of the development will mitigate and minimise those impacts to a satisfactory extent.*

The impact of the proposed development on those matters outlined in (3) above was considered as part of the original assessment report. The following is the summary from this report.

> *The past land uses of the subject site has resulted in vegetation being predominantly exotic grassland, with the exception of a small patches of the Bega Dry Grass Forest EEC in the southern portion of the site.*
>
> *The Flora and Fauna Assessment concludes that the development is unlikely to have a significant adverse effect on any threatened species, population or ecological communities, or their habitats.*
>
> *It is however recommended that Council:*
>
> - *Commit to the long term management of the remnant EEC by supporting the rehabilitation program which has been developed as outlined in Section 12.1.5 of the EIS; and*
> - *Carry out the development in accordance with the recommended mitigation measures* (Geolyse 2011:40)*.*

Thus it is concluded that the development has been sited, designed and can be managed to avoid potential adverse environmental impacts.

8.2.2.5 Riparian Land and Waterways

The subject site contains land identified on the *Natural Resource Water Map Sheet CL2_011*, specifically 'watercourse - waterway'. Clause 6.3 of the draft LEP states:

> *(3) In assessing a development application, the consent authority must take into consideration the following matters:*
>
> *(a) the identification of potential adverse impacts on:*
>
> *(i) water quality within the watercourse,*
>
> *(ii) aquatic and riparian habitats and ecosystems,*
>
> *(iii) stability of the bed, shore and banks of the watercourse, and*
>
> *(iv) free passage of fish and other aquatic organisms within or along the watercourse,*
>
> *(b) the likelihood that the development will increase water extraction from the watercourse, and*
>
> *(c) any proposed measures to minimise or mitigate those impacts.*
>
> *(4) Before granting consent to development to which this clause applies the consent authority must be satisfied that:*
>
> *(a) the development is sited, designed and managed to avoid potential adverse environmental impacts, or*
>
> *(b) where an impact cannot be avoided, and having taken into consideration feasible alternatives, the proposed design, construction and operational management of the development will mitigate and minimise those impacts to a satisfactory extent.*

In relation to (3)(a), the following comments are provided:

(i) The potential impacts of the development on water quality within the watercourse were considered in the EIS. They are summarised and considered in **Section 4.6.2** of this report.

(ii) In relation to the impact of the development on aquatic and riparian habitats and ecosystems, the applicant has provided the following information:

> *No specific Aquatic Ecology Impact Assessment was undertaken. However, the flora and fauna assessment investigated both aquatic and terrestrial habitats within the study area, including the two small water storages near the development footprint. For example, four frog species were detected in these water storages and it was concluded unlikely that the site supports threatened frog species. Furthermore, the broader EIS demonstrates how downstream impacts on water quality and aquatic habitats would be mitigated.*

(iii) The proposed development would not impact on the stability of the bed, shore or banks of any of the watercourses on site.

(iv) The proposed development would not impact on the free passage of fish or any other aquatic organisms within or along the watercourse.

In relation to 3(b), the proposed development would not result in water extraction from the watercourse.

In relation to 3(c), the proposed mitigation measures to ensure the development does not adversely impact on riparian land and waterways are provided in **Section 4.6.3**.

As outlined throughout this report and the previous assessment report, it can be concluded that the development as sited and designed can be managed to avoid potential adverse environmental impacts on riparian land and waterways.

8.2.2.6 Earthworks

Clause 6.11 of the draft LEP requires council to consider the following matter before granting consent to earthworks:

(a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,

(b) the effect of the proposed development on the likely future use or redevelopment of the land,

(c) the quality of the fill or of the soil to be excavated, or both,

(d) the effect of the proposed development on the existing and likely amenity of adjoining properties,

(e) the source of any fill material or the destination of any excavated material,

(f) the likelihood of disturbing Aboriginal objects or other relics,

(g) proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

In relation to (a), as outlined in **Section 4.6.2.1** the development would not have an adverse impact on existing drainage patterns in the locality. Section 3.8.1 of the original assessment report shows that the site is suitable for the development in terms of geology, and thus the development is not expected to have an adverse impact on soil stability.

In relation to (b), **Section 8.2.2.2** explains once the facility has ceased operation, the land would be suitable for grazing activities, as it is now.

In relation to (c), as outlined in **Section 8.2.1**, the site is not contaminated.

In relation to (d), as outlined throughout this report, the proposed development is shown that it can meet all relevant amenity criteria (odour, particulates, and noise). Providing the development is operated and managed in accordance with its EPL, mitigation measures and any consent conditions, it is not expected to result in unacceptable adverse impacts on the amenity of adjoining properties.

In relation to (e), the development does not propose the import of any fill. It is estimated that there would be approximately 42,860m^3 of surplus void material from the development. It is proposed this material would be transported to the existing Merimbula landfill site for capping and rehabilitation. It is understood the quality of the fill would be suitable for that purpose.

In relation to (f), as outlined in Section 3.4.1 of the original assessment report there were no Aboriginal sites or potential archaeological deposits found to be present within the CWF and leachate ponds area within the subject site. The EIS concluded that “no items or locations of Aboriginal heritage are likely to be affected either directly or indirectly from the proposed development” (AECOM 2009a:13-4).

In relation to (g), **Section 4.6** of this report addresses this and concludes that the development would not adversely impact upon the adjacent watercourse or drinking water catchment.

Conclusion

9.1 CONCLUSION

The proposed development is for the establishment and use of a Waste Management Facility, known as the Central Waste Facility (CWF) on Lot 3 DP 592206, Wanatta Lane, Wolumla. The DA does not include the proposed upgrade of Wanatta Lane as the upgrade works have already received separate approval under Part 5 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). Similarly, the DA does not include extension of electricity supply to the site. The required Part 5 assessment would be undertaken by Essential Energy.

The proposed development is permissible with consent in the 1(a) zone under *Bega Valley Local Environmental Plan 2002* (Bega LEP) and is not antipathetic to the zone objectives. The development is consistent with the provisions of Bega LEP, *Lower South Coast Regional Environmental Plan No. 2*, SEPP 33, SEPP 44, SEPP 55, Infrastructure SEPP and DCP No. 7. The development is consistent with the provisions of the *Draft Bega Valley LEP 2010*. There are no planning agreements entered into, or any draft planning agreements offered by the developer. No provision of the Regulations (specified for the purpose of s.79C(1)(a)(iv) of the Act) are applicable to this development.

As outlined throughout this report and the original assessment report, the development (operating with the recommended mitigation measures) is not expected to result in any significant adverse impacts.

The submissions made to the DA have been considered and clarification and/or alterations made to the development to address these concerns where relevant.

The development is consistent with Council's 2020 Vision for Waste and is thus considered to be in the interest of the public as a whole.

9.2 RECOMMENDATION

It is recommended that the DA be approved, subject to the conditions as outlined in **Appendix E**.

References

AECOM. 2011. *Social and Economic Impacts,* AECOM, Sydney, NSW.

AECOM. 2010. *Bega Valley Shire Central Waste Facility Environmental Impact Statement: Representations Report*, AECOM, Sydney, NSW.

AECOM. 2009a, *Bega Valley Shire Central Waste Facility Environmental Impact Statement: Volume 1 Main Report*, AECOM, Gordon, NSW.

AECOM. 2009b, *Bega Valley Shire Central Waste Facility Environmental Impact Statement: Volume 2 Appendices A-J*, AECOM, Gordon, NSW.

AECOM. 2009c, *Bega Valley Shire Central Waste Facility Environmental Impact Statement: Volume 3 Appendices K-T*, AECOM, Gordon, NSW.

Cardno. 2009, *Revision of Surface Water Quality Modelling for the Central Waste Facility*, Cardno, Gordon, NSW.

Geolyse. 2011*, Development Assessment Report: Bega Valley Shire Central Waste Facility*, Geolyse, Orange, NSW.

GHD. 2009, *Bega Central Waste Facility Leachate Storage Modelling*, GHD, Sydney, NSW.

HLA Envirosciences Pty Ltd (HLA). 2006, *Baseline Groundwater Monitoring: Central Waste Facility Wanatta Lane, Wolumla*, HLA Envirosciences, Gordon, NSW.

Learmonth, R., Whitehead, R., Boyd, B. & Fletcher, S. 2007, *Living and Working in Rural Areas: A Handbook for Managing Land Use Conflict Issue on the NSW North Coast*, NSW Department of Primary Industries, Wollongbar, NSW.

NSW EPA. 2000, *Industrial Noise Policy*, EPA, Sydney South, NSW.

Wright Corporate Strategy Pty Ltd (WCS). 2004, *Site Selection of Central Waste Facility Bega Valley Shire Council*, WCS, Port Macquarie, NSW.

Appendix A

WANATTA LANE UPGRADE COUNCIL REPORT

4. Review of Environmental Factors – Proposed road upgrade, Wanatta Lane, Wolumla

Group Manager, Planning and Environment

PRECIS

The Review of Environmental Factors (REF) has been prepared by Eco Logical Australia on behalf of Council to address the legislative requirements and potential environmental impacts associated with the upgrade of a 1.61km section of Wanatta Lane Wolumla.

The form and content of the REF have been reviewed and assessed by Council's planning and environmental staff and it is considered that all legislative and environmental matters (impact/mitigation) have been suitably addressed.

Approval of the project is recommended.

DESCRIPTION OF THE PROPOSAL

Wanatta Lane, from its intersection with the Princes Highway, has been constructed to a 6.4 metre wide gravel standard for a distance of approximately 2.3 kilometres. From the end of the gravel section, the road has been constructed and sealed to its intersection with Candelo Wolumla Road.

The current constructed alignment of the road generally follows the nominated road reserve. However, there are sections of the road which encroach onto adjoining privately owned lands.

The proposed upgrade would involve the realignment, widening and reconstruction of the existing gravel road to a 6.4 metre wide sealed standard with 1 metre wide shoulders for a distance of 1.61 kilometres from its intersection with the Princes Highway.

The new section of road would encompass a new intersection treatment to service the proposed Central Waste Facility and would end approximately 170 metres to the south of the proposed new intersection. The proposed new intersection would be located approximately 85 metres to the south of the existing gate accessing the site of the Central Waste Facility.

The new location of the intersection has been chosen to optimise available sight distance to vehicles accessing the proposed Central Waste Facility.

The upgraded road would be constructed to a design standard of 60 kph with suitable drainage.

The proposal would result in removal of predominantly Forest Red Gum (E*ucalyptus tereticornis*) of ranging age from regrowth to mature trees of greater than 75cm diameter at breast height (DBH). Total Forest Red Gums to be removed is in the order of 115 trees (approximately half the small regrowth trees), 7 of these are considered large trees (greater than 75cm DBH), of which all 7 are hollow bearing trees.

Soil and water management controls would be installed prior to earthworks commencing.

The works would be undertaken over a 9 week period between the hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday.

Normal road construction plant including bulldozer, scraper, grader, excavator, dump trucks, water tanker and roller would be used.

Design plans will be available at Council's meeting. The plans will show both the existing and proposed road alignment.

PLANNING ASSESSMENT

Environmental Planning and Assessment Act 1979

Development consent under Part 4 of the Act is not required as Clause 80 of Bega Valley Local Environmental Plan 2002 exempts Council from the need to obtain development consent for infrastructure works as outlined below;

> **80 Roads, drainage, recreational areas and parking**
>
> Nothing in this plan prevents the Council or another public authority from carrying out, or requires the Council or another public authority to obtain consent to carry out, development on land within any zone for the purpose of roads, stormwater drainage, recreational areas, landscaping, gardening, bushfire hazard reduction, amenities buildings or parking.

Whilst development consent is not required, the proposed works would constitute an activity as defined by Part 5 of the Act.

Whilst Council is the proponent for the project, it is also the determining Authority under Part 5 of the Act. As the determining authority, Council must consider, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

Under the provisions of the Act, Council shall not carry out or grant approval in relation to an activity that is likely to have a significant impact on the environment or threatened species unless the activity has been subject to the preparation and consideration of an environmental impact statement (EIS).

In assessing the requirements of Part 5 of the Act, the full length of the section of road to be upgraded was subject to extensive field investigation and reporting culminating in the preparation of a detailed Review of Environmental Factors by consultants Eco Logical.

The report addresses all relevant legislative requirements and key environmental, cultural and social values and risks. It provides an assessment of the significance of the impacts of the project on identified values and recommends safe guards to avoid or minimise likely impacts.

The report concludes that the project would not have a significant adverse impact on the environment provided that recommended mitigation measures are adopted and implemented as part of the works.

Council's planning and environmental staff have assessed the content of the report and concur with its findings. Accordingly, a higher level of assessment (EIS) is not considered warranted.

Legislative and Policy Requirements

The REF has provided an extensive review of all relevant Commonwealth, State and Local legislative requirements as they relate to the scope of the project. On review, the project is not inconsistent with the following legislation.

- Environmental Protection and Biodiversity Conservation Act 1999.
- Environmental Planning and Assessment Act 1979.
- Threatened Species Conservation Act 1995.
- National Parks and Wildlife Act 1974.
- Heritage Act 1977.
- Native Vegetation Act 2003.
- Protection of the Environment Operations Act 1997.
- Roads Act 1993.
- State Environmental Planning Policy No. 44 – Koala Habitat Protection.
- Bega Valley Local Environmental Plan 2002.

Manager Environmental Services Comment

The proposed works would involve realigning, widening and reconstruction of the existing gravel roadway to a 6.4m wide bitumen sealed road with 1m shoulders. The upgrade would extend from the Princes Highway intersection west for 1.61km to 170m south of the entrance of the proposed Central Waste Facility. A total area of 1.35 ha is proposed to be directly impacted by the works, consisting of a linear strip along the road corridor of 1.61 km length.

The proposal would result in removal of predominantly Forest Red Gum (E*ucalyptus tereticornis*) of ranging age from regrowth to mature trees of greater than 75cm diameter at breast height (DBH). Total Forest Red Gums to be removed is in the order

of 115 trees (approximately half the small regrowth trees), 7 of these are considered large trees (greater than 75cm DBH), of which all 7 are hollow bearing trees.

An assessment of the REF prepared by Eco Logical Australia (ELA) was conducted by the Environmental Services staff for adequacy against statutory requirements and standards for environmental impact assessment and biodiversity surveying developed by the Department of Environment, Climate Change and Water (DECCW).

Two Flora and Fauna Assessments were conducted on the proposed site by Hayes Environmental in December 2008 and Eco Logical Australia (ELA) in October and December 2010.

No threatened flora species were found on site. Four (4) threatened fauna species were detected within the site, these being microchirpoteran bats. The site was found to contain one (1) Endangered Ecological Community (EEC), Lowland Grassy Woodland listed under the Threatened species Act 1995.

An assessment of the likelihood that additional threatened species, populations and ecological communities, known to occur within the region, may occur within the development site determined no additional threatened flora or fauna species are likely to occur in or occupy the survey site. An Assessment of Significance (7-part test) found that the four (4) threatened bat species were unlikely to be significantly impacted by the removal of seven (7) potential roosting trees due to the availability of similar resources elsewhere in the extensive forests and remnant woodlands in the locality to these highly mobile species. No other threatened flora or fauna species were considered likely to utilise or occur within the site.

The proposed action will result in the loss of approximately 0.25 ha of the Lowland Grassy Woodland EEC in relatively good condition. Similar condition EEC was identified adjacent to the site to the north. The extent of the local occurrence of EEC is not fully known, however Tozer *et al.* (2006) estimates 900-1000 ha of the Lowland Grassy Woodland EEC in the Toothdale/Wolumla/Frogs hollow area. As such the Lowland Grassy woodland EEC to be removed by the proposed works comprises a very small part (less than 0.028%) of the local occurrence of the community.

The assessments determined that the study area does not support a unique assemblage of characteristic flora species of the Lowland Grassy Woodland EEC that does not occur elsewhere within the locality. Similarly, the fauna assemblage inhabiting the study area is likely to be distributed throughout the locality and adjacent vegetation.

The study area is highly fragmented and does not provide connectivity between more intact habitats. The proposed works will not result in the fragmentation or isolation of the local occurrence of the Lowland Grassy Woodland EEC as only a very small area within the much more extensive local occurrence will be affected and the community will continue to occur more extensively to the north, west and east of the study area.

Environmental Services staff have considered the REF assessment and Flora and Fauna Assessments against statutory requirements and DECCW survey standards and have determined that within a landscape context, the proposed works would not substantially and adversely modify the composition of the Lowland Grassy Woodland EEC such that its local occurrence is likely to be placed at risk of extinction.

It is recommended that should the proposal be considered for approval then the following conditions should be imposed:

1. During construction works, dust emissions must be minimised so as not to result in a nuisance to nearby residents or result in a potential pollution incident. Adequate dust control measures must be provided to the site prior to the works commencing and the measures and practices must be maintained throughout to the satisfaction of the Group Manager Planning & Environment.

2. An Erosion and Sediment Control Plan (ESCP) shall be prepared in accordance with the provisions of the NSW Government and Landcom, "Managing Urban Stormwater - Soils and Construction, Volume 1" (4th Edition 2004) and Volume 2C and D (Gravel and Sealed Roads, DECCW 2008). Site disturbance must not be commenced until the ESCP is lodged and approved by Group Manager Planning & Environment.

3. The burning of vegetation felled or removed as a result of this development consent is prohibited. Tree head or crowns, scrub and stumps should be mulched or chipped and be stockpiled on site to be used in soil erosion and sediment control management.

4. Where possible, topsoil must be stripped only from those areas designated on the approved plan and must be stockpiled for later use in rehabilitation and landscaping.

5. Stockpiles (topsoil, spoil, subsoil, sand, or otherwise) must be:
   - located at least 2 metres from any hazard areas, including surfaces with grades greater than 1.5 per cent, zones of concentrated flow, driveways, footpaths, nature strips, kerb line gutter , swales or standing vegetation;
   - protected from upslope stormwater surface flows;
   - provided with sediment filters downslope; and
   - provided with a protective cover that reduces the C-factor on bare surface areas to 0.15 or less where they are likely to be worked for more than 20 working days.

6. Construction noise from the works shall at all times meet the requirements of the NSW Industrial Noise Policy and the NSW Interim Construction Noise Guideline (DECCW 2009).

7. Details of the vegetation rehabilitation proposal (as described in the REF) and including planting schedule, design and weed management shall be submitted to the Group Manager Planning & Environment for assessment and approval prior to works commencing on site. Vegetation rehabilitation and weed management and mitigation will be conducted according to best practice and will be addressed in the Construction EMP (CEMP).

8. Machinery and vehicles used in construction works must be washed before and after onsite access to reduce the introduction and spread of weeds and pathogens. Wash-downs must occur at appropriate facilities.

Asset

Wanatta Lane is a Council maintained road over its entire length. The proposed realignment and construction of the road would:

- effectively resolve any potential legal access issues stemming from the encroachment of the existing road formation onto adjoining privately owned lands.
- limit the need for ongoing maintenance grading to a length of approximately 700 metres.
- Improve road safety standards.

Cultural

The REF process involved archaeological investigations over the length of the section of road to be up graded by a suitably qualified and experienced consultancy - On Site Cultural Heritage Management.

The basis of the investigation stemmed from the cultural heritage assessment for the CWF which highlighted the potential for items of aboriginal significance (scarred trees) to be present within the existing road reserve.

The investigations included a desktop assessment (Aboriginal Heritage Information Management System) and field survey. A representative of the Bega Local Aboriginal Land Council (BLALC) was present during the field survey.

The Report concludes that there were no objects or areas of aboriginal significance identified and as such, there were no cultural heritage constraints over the project.

A copy of the consultant's report was forwarded to the BLALC.

Submissions

The REF was notified to a total of 35 adjoining/adjacent owners and owners in the vicinity of the proposed works inviting submissions during the 21 day notification period. WRAG was also notified and invited to comment.

A total of 6 submissions were received during the notification period and the issues raised are outlined below, followed by staff comment.

- It would appear that BVSC has chosen to remove the Wanatta Lane road widening from the Central Waste Facility DA process and make it a stand-along project.

  I refer to the conclusion on page 33 of the Ecological REF where it states "This Environmental Assessment has identified and assessed the potential of the proposal to wide and upgrade Wanatta Lane in association with the proposed Bega Valley CWF and Wolumla."

  I fail to see how this proposed road widening of Wanatta Lane could possibly be construed as being a separate standalone project. Further more, it has been stated

that these works will not be undertaken if approval of the CWF is not forthcoming from the JRPP.

8 **Comment** – Legal advice was sought on whether the proposed upgrading of Wanatta Lane was a Part 4 or Part 5 matter under the Environmental Planning and Assessment Act 1979 and the legal advice from M E McMahon and Associates concluded that the proposed roadworks would fall within Part 5 of the Environmental Planning and Assessment Act.

Whilst it is acknowledged that the roadworks are proposed as part of the proposed Central Waste Facility, the impacts of the proposed roadworks have been assessed separately under Part 5 by the REF.

· The Wanatta Lane locality is already prone to high winds and the loss of any tree, let alone the 115 being contemplated will make the containment of litter at the proposed CWF even more difficult. These existing trees marked for removal, act as a windbreak along the Wanatta Lane ridgeline and each one will be needed should the CWF commence operations.

8 **Comment** – The issue of litter is addressed in the Environmental Impact Statement for the proposed Central Waste Facility.

· On page 28 of the REF, three alternatives were put forward for the roadworks.

A fourth alternative that was not even considered is the re-alignment of Wanatta Lane to the northern side of its existing location. This re-alignment would relocated Wanatta Lane onto land currently being redeveloped on the Ayredale property and would mean that far less flora and fauna would be affected than what is currently being proposed.

It is understood that a re-alignment of this nature will create some minor changes to the council approved subdivision that has a common boundary with Wanatta Lane. It seems a grave oversight on Council's part that this alternative was not put in place as part of the conditions of approval for Ayredale's 18 lot rural residential subdivision.

I feel this alternative now needs to be considered, and the existing Wanatta Lane road easement protected as a wildlife corridor with further tree plantings taking place within its precincts. This tree barrier in addition to forming a wildlife habitat would be an asset to local amenity, and a much needed windbreak for the proposed CWF.

8 **Comment** – The proposal subject of the REF is for the upgrading of Wanatta Lane within the existing road reserve. Relocating the road to the north (or south) would require the purchase of private land, the redesign of the road engineering plans and

redesign of the already approved Ayredale subdivision and the closing and rehabilitation of the existing gravel road at significant additional cost.

- If the road is upgraded from the Princes Highway for approximately 1.6km then why can't the remaining 1km be sealed to the corner of Greendale Lane? As I drive this road at least four times a week, I believe that the remainer of this road is the worst section, therefore it should be sealed. This would make sense as all the road machinery and equipment would be onsite and it would save money by sealing all the unmade section of Wanatta Lane. By not sealing this extra 1km section would mean Council would need to spend more money by having to maintain this unmade section.

8 **Comment** – The REF assessment is for the upgrade of the first 1.6km of Wanatta Lane only, and does not assess the suitability of the remainder of Wanatta Lane for vehicular traffic. This issue has been referred to Council's Group Manager Infrastructure Waste & Water for separate consideration.

- According to the REF document page 1, the road will be constructed to a design standard of 60 kph. As it presently has no posted speed limit, does that mean drivers can drive to any speed they want? Nothing has been mentioned about the speed limit of the road, should the road be upgraded. Upgrading of the road would create more traffic movement in both directions, therefore a safer speed limit or road humps should be imposed to slow down the extra traffic. Who will be policing the speed limit on the road with all the increased traffic flow?

- The school bus also uses Wanatta Lane to take students to the local school and meet the bus at the interchange in Wolumla. The school bus service should be consulted regarding this proposal, as their bus route needs to be made safe for children travelling along this road.

8 **Comment** – These matters have been referred to Council's Group Manager Infrastructure Waste and Water for consideration and referral to the Local Traffic Committee if appropriate.

- The upgrading of the road will also have a social impact on the residents living in the area. Increased traffic, noise and dust will impact on their lifestyle. It will also affect their leisure activities such as walking, horse riding and bike riding. These activities would not be possible should the road be sealed unless a speed restriction of 60kph is imposed.

8 **Comment** – The issue of speed restriction has been referred to Council's Group Manager Infrastructure Waste and Water.

- As Council only grades this road once a year, will any unmade sections be graded and watered more often to cope with the increased traffic flow.

8 **Comment** – This matter has been referred to the Group Manager Infrastructure Waste & Water for consideration.

· Surely you must be fully aware that the Joint Regional Planning Panel is making a decision as to whether the proposed Waste Facility is to even be on Wanatta Lane and has deferred it's decision til 14 June 2011. How then can you even think of doing proposed roadworks.

8 **Comment** – The roadworks would only occur should the proposed Central Waste Facility proceed.

· There is a new State Government in office and you must know that Mr Andrew Constance, State Member for Bega, has liaised with the State Lands Minister to allocate crown land in a heavily treed area away from water courses and houses that is perfect for a waste facility.

8 **Comment** – The proposed roadworks, if approved, would not proceed if the proposed Central Waste Facility was not to be established as proposed in Wanatta Lane.

· The loss of vegetation and in particular hollow-bearing trees will provide a greater strain on the local biodiversity.

· **Comment** - Hayes Environmental and ELA concluded that the proposed vegetation loss would not jeopardise the viability of the local vegetation community and associated threatened fauna due to the small scale (less than 0.25ha) of disturbance to vegetation of environmental value and due to the presence of larger areas of similar & better condition vegetation in the locality.

· The vegetation to be removed along Wanatta Lane provides an important wildlife corridor.

8 **Comment** - The proposed development area is highly fragmented and does not provide connectivity between more intact habitats. The proposed works will not result in the fragmentation or isolation of the local occurrence of the Lowland Grassy Woodland EEC as only a very small area within the much more extensive local occurrence will be affected and the community will continue to occur more extensively to the north, west and east of the study area.

· The cumulative effects of clearing for the Wanatta road widening, electricity easement, CWF and the Ayredale & Frog Hollow subdivisions on the local biodiversity.

8 **Comment** - The environmental impacts of each of the listed proposed developments have been assessed in accordance with statutory requirements and suitable mitigation measures have been proposed. Suitable environmental offsets

for road developments within the subdivisions have been determined between the landholders and the Southern Rivers Catchment Management Authority (SRCMA).

· There is a difference in the number of trees to be cleared between the two environmental reports

8 **Comment** - Hayes Environmental (2008) estimated in the order of 75 trees to be removed under the proposed works whereas ELA (2011) estimated 115 trees. Hayes Environmental did not include small saplings in this estimate while the estimate provided by ELA does include saplings and is deemed to be more accurate.

The proposal will result in removal of predominantly Forest Red Gum (E*ucalyptus tereticornis*) of ranging age from regrowth to mature trees of greater than 75cm diameter at breast height (DBH). Total Forest Red Gums to be removed is in the order of 115 trees (approximately half the small regrowth trees), 7 of these are considered large trees (greater than 75cm DBH), of which all 7 are hollow bearing trees.

· The age of the trees to be removed is not addressed

8 **Comment** - No age class has been provided however, the trees to be removed have been divided into categories of DBH (diameter at breast height) which is a standard method for determining the function of a tree in an ecosystem. Trees with a DBH of 75cms or greater are described as mature trees. There are seven (7) trees with a DBH greater than 75cms to be removed by the proposed works.

· Was the timing of the flora and fauna surveys adequate for detecting species likely to inhabit the site?

8 **Comment** - Hayes Environmental and ELA undertook flora surveys on the 15th November 2008 and 20th October 2010 respectively. The study area for both surveys was defined as the 20m immediately adjoining the 1.6 km length of the direct impact area, totalling 6 ha. According to DECCW profile for the identified habitat type (Lowland Grassy Woodland in the South East Corner Bioregion - Southern Rivers Region), all times of the year are suitable for surveying for identification of key species within this habitat. Therefore it is considered that the survey timings were appropriate for detection of the majority of threatened flora species that may occur on the site.

Fauna surveys were undertaken by Hayes Environmental from 25th to 27th November 2008 and by ELA on the 20th October and 7th December 2010. The study area defined above was surveyed.

Threatened species databases were searched for recordings within 5km and 10km

of the study area by Hayes & ELA respectively, and were used to inform targeted searches for threatened species.

Hayes conducted day surveys from the 25th to 27th Nov 2008 targeting areas of suitable habitat for mammals, birds, reptiles and amphibians. Specific bird surveys were conducted late afternoon of 25th & 26th Nov and early morning 27th Nov 2008. Evening spotlighting, stag-watching and ANABAT surveys were conducted on the 25th & 26th Nov targeting nocturnal mammals, birds and microchiropteran bats.

ELA conducted day surveys on the 20th October and 7th December 2010 targeting areas of suitable habitat for mammals, birds, reptiles and amphibians. Specific searches were conducted for habitats or resources of relevance to threatened fauna known to occur in the region. Evening spotlighting, stag-watching, call playback and ANABAT surveys were conducted on the 20th Oct & 7th Dec targeting nocturnal mammals, birds and microchiropteran bats. Hollow-bearing trees and feed trees were targeted for spotlighting.

It is considered that the fauna surveys were adequate considering the degree of disturbance and small area (approximately 1.35 ha) likely to be impacted by the proposal.

CONCLUSION

The proposal is for the upgrade of 1.61 km of Wanatta Lane from its intersection with the Princes Highway to provide access to the proposed Central Waste Facility which is subject to a separate assessment process under Part 4 of the Environmental Planning & Assessment Act 1979 and determination by the Joint Regional Planning Panel.

The Review of Environmental Factors has identified a number of heads of consideration and potential environmental impacts associated with the scope of the proposed works and as necessary, identified appropriate mitigation measures which should be employed as part of the works.

The mitigation measures recommended by the REF together with those recommended by Council's environmental services staff should be adopted as part of any subsequent works program for the project.

RECOMMENDATION

1. That the upgrade of the nominated section of Wanatta Lane be approved in accordance with the provisions of Part 5 of the Environmental Planning and Assessment Act 1979.

2. The project being carried out in accordance with the Review of Environmental factors entitled "Proposed Road Widening Wanatta Lane, Wolumla" dated 28

February 2011 inclusive of all the mitigation measures as detailed in Section 4 of the report.

3. The scope of the proposed works shall be implemented through the preparation and adoption of a Construction Environmental Management Plan the form and content of which, shall be approved by Council's Group Manager Planning and Environment prior to works commencing.

4. Erosion and sedimentation controls shall be designed and implemented prior to site works commencing in accordance with the NSW Government and Landcom, publication "Managing Urban Stormwater – Soils and Construction, Volume 1" (4th Edition 2004) and Volume 2C and D (Gravel and Sealed Roads, DECCW 2008). Site disturbance must not commence until a fully detailed erosion and sediment control plan has been lodged and endorsed by Council's Group Manager Planning and Environment.

5. During construction works, dust emissions must be minimised so as not to result in a nuisance to nearby residents or result in a pollution incident. Adequate dust controls measures must be provided to the site prior to the works commencing and the measures and practices must be maintained throughout the works program to the satisfaction of Council's Group Manager Planning and Environment.

6. The burning of vegetation felled or removed as part of the programmed work is prohibited. Tree head or crowns, scrub and stumps should be mulched or chipped and stockpiled on-site to be used in soil erosion and sediment control management.

7. Where possible, topsoil must be stripped only from those areas within the designated work site and must be stockpiled for later use in the rehabilitation and landscaping of the disturbed areas.

8. Stockpiles (topsoil, subsoil, sand, or otherwise) must be:

   - Located at least 2 metres from any hazard areas, including surfaces with grades greater than 1.5%, zones of concentrated flow, driveways, swales or standing vegetation;
   - Protected from upslope stormwater surface flows;
   - Provided with sediment filters downslope and;
   - Provided with a protective cover that reduces the C-factor on bare surface areas to 0.15 or less where they are likely to be worked for more than 20 working days.

9. Construction noise shall, at all times, meet the requirements of the NSW Industrial Noise Policy and the NSW Interim Construction Noise Guideline (DECCW 2009).

10. A detailed site rehabilitation plan incorporating a planting schedule and design and weed management practices shall be prepared and submitted to Council's Group Manager Planning and Environment for assessment and endorsement prior to site works commencing. Vegetation rehabilitation and weed management and migration shall be in accordance with industry best practice and is to be included in the Construction Environmental Management Plan.

11. Machinery and vehicles used in construction works must be washed before and after on-site access to reduce the introduction and spread of weeds and
480 pathogens. Wash-downs must occur at appropriate facilities.

12. No later than 14 days prior to the commencement of site works, all adjoining and adjacent land owners shall be formally notified of the date of commencement, the likely time frame for the completion of works and contact details of relevant Council staff overseeing the works.

13 The Review of Environmental Factors be placed on Council's website for public information prior to and extending over the duration of the works.

14. Any works within the Princes Highway road reserve shall be to the requirements and satisfaction of the Roads and Traffic Authority.

Appendix B

WANATTA LANE UPGRADE COUNCIL MINUTES

BEGA VALLEY SHIRE COUNCIL

Planning & Environment

Standing Committee Meeting Minutes

Held on Tuesday 3 May 2011

at the Council Chambers, Bega commencing at 2.36 pm

PRESENT	Councillor Campbell (CHAIRPERSON) and Councillors Allen, Britten, Fitzpatrick, Hede, Hughes, Seckold and Wykes
IN ATTENDANCE	Mr Peter Tegart - General Manager, Ms Leanne Barnes - Group Manager Community and Relationships, Mr Andrew Woodley - Group Manager Planning and Environment, Mr Wayne Sartori - Group Manager Infrastructure Waste and Water, Ms Tracy Hicks - Executive Manager Organisational Support and Ms Tamara Whiting - Minute Secretary

1. Confirmation of Minutes

RESOLVED on the motion of Crs Allen and Britten

That the Minutes of the Planning & Environment Committee meeting held on 12 April 2011, as circulated, be taken as read and confirmed.

IN FAVOUR: Crs Allen, Britten, Campbell, Fitzpatrick, Hede, Hughes, Seckold and Wykes

AGAINST: Nil

ABSENT: Cr Pincini

2. Apologies

RESOLVED on the motion of Crs Seckold and Allen

That the apology received from Cr Pincini be accepted for their inability to attend the meeting.

IN FAVOUR: Crs Allen, Britten, Campbell, Fitzpatrick, Hede, Hughes, Seckold and Wykes

AGAINST: Nil

ABSENT: Cr Pincini,

3. DA No. 2010.0502: Scrap Metal Recycling Facility (Junkyard) and erection of a shed – Lot 3 DP 735201, 27 D'Arcy Lane, Jellat Jellat

RESOLVED on the motion of Crs Britten and Allen

That the matter be deferred for further report from Staff.

IN FAVOUR: Crs Allen, Britten, Campbell, Fitzpatrick, Hede, Hughes, Seckold and Wykes

AGAINST: Nil

ABSENT: Cr Pincini

4. Review of Environmental Factors – Proposed road upgrade, Wanatta Lane, Wolumla

RESOLVED on the motion of Crs Allen and Fitzpatrick

RECOMMENDATION

1. That the upgrade of the nominated section of Wanatta Lane be approved in accordance with the provisions of Part 5 of the Environmental Planning and Assessment Act 1979.

2. The project being carried out in accordance with the Review of Environmental factors entitled "Proposed Road Widening Wanatta Lane, Wolumla" dated 28 February 2011 inclusive of all the mitigation measures as detailed in Section 4 of the report.

3. The scope of the proposed works shall be implemented through the preparation and adoption of a Construction Environmental Management Plan the form and content of which, shall be approved by Council's Group Manager Planning and Environment prior to works commencing.

4. Erosion and sedimentation controls shall be designed and implemented prior to site works commencing in accordance with the NSW Government and Landcom, publication "Managing Urban Stormwater – Soils and Construction, Volume 1" (4th Edition 2004) and Volume 2C and D (Gravel and Sealed Roads, DECCW 2008). Site disturbance must not commence until a fully detailed erosion and sediment control plan has been lodged and endorsed by Council's Group Manager Planning and Environment.

5. During construction works, dust emissions must be minimised so as not to result in a nuisance to nearby residents or result in a pollution incident. Adequate dust controls measures must be provided to the site prior to the works commencing

and the measures and practices must be maintained throughout the works program to the satisfaction of Council's Group Manager Planning and Environment.

6. The burning of vegetation felled or removed as part of the programmed work is prohibited. Tree head or crowns, scrub and stumps should be mulched or chipped and stockpiled on-site to be used in soil erosion and sediment control management.

7. Where possible, topsoil must be stripped only from those areas within the designated work site and must be stockpiled for later use in the rehabilitation and landscaping of the disturbed areas.

8. Stockpiles (topsoil, subsoil, sand, or otherwise) must be:
   - Located at least 2 metres from any hazard areas, including surfaces with grades greater than 1.5%, zones of concentrated flow, driveways, swales or standing vegetation;
   - Protected from upslope stormwater surface flows;
   - Provided with sediment filters downslope and;
   - Provided with a protective cover that reduces the C-factor on bare surface areas to 0.15 or less where they are likely to be worked for more than 20 working days.

9. Construction noise shall, at all times, meet the requirements of the NSW Industrial Noise Policy and the NSW Interim Construction Noise Guideline (DECCW 2009).

10. A detailed site rehabilitation plan incorporating a planting schedule and design and weed management practices shall be prepared and submitted to Council's Group Manager Planning and Environment for assessment and endorsement prior to site works commencing. Vegetation rehabilitation and weed management and migration shall be in accordance with industry best practice and is to be included in the Construction Environmental Management Plan.

11. Machinery and vehicles used in construction works must be washed before and after on-site access to reduce the introduction and spread of weeds and pathogens. Wash-downs must occur at appropriate facilities.

12. No later than 14 days prior to the commencement of site works, all adjoining and adjacent land owners shall be formally notified of the date of commencement, the likely time frame for the completion of works and contact details of relevant Council staff overseeing the works.

13 The Review of Environmental Factors be placed on Council's website for public information prior to and extending over the duration of the works.

14. Any works within the Princes Highway road reserve shall be to the requirements and satisfaction of the Roads and Traffic Authority.

15. That this approval not take effect unless and until there is a development consent on the Wanatta Lane Central Waste Facility.

IN FAVOUR: Crs Allen, Britten, Campbell, Fitzpatrick, Hede, Seckold and Wykes

AGAINST: Cr Hughes

ABSENT: Cr Pincini

Closure

There being no further business, the Chairperson closed the meeting at 2.50pm.

CONFIRMED .....

CHAIRPERSON

Appendix C

ELECTRICITY UPGRADE ROUTE OPTIONS

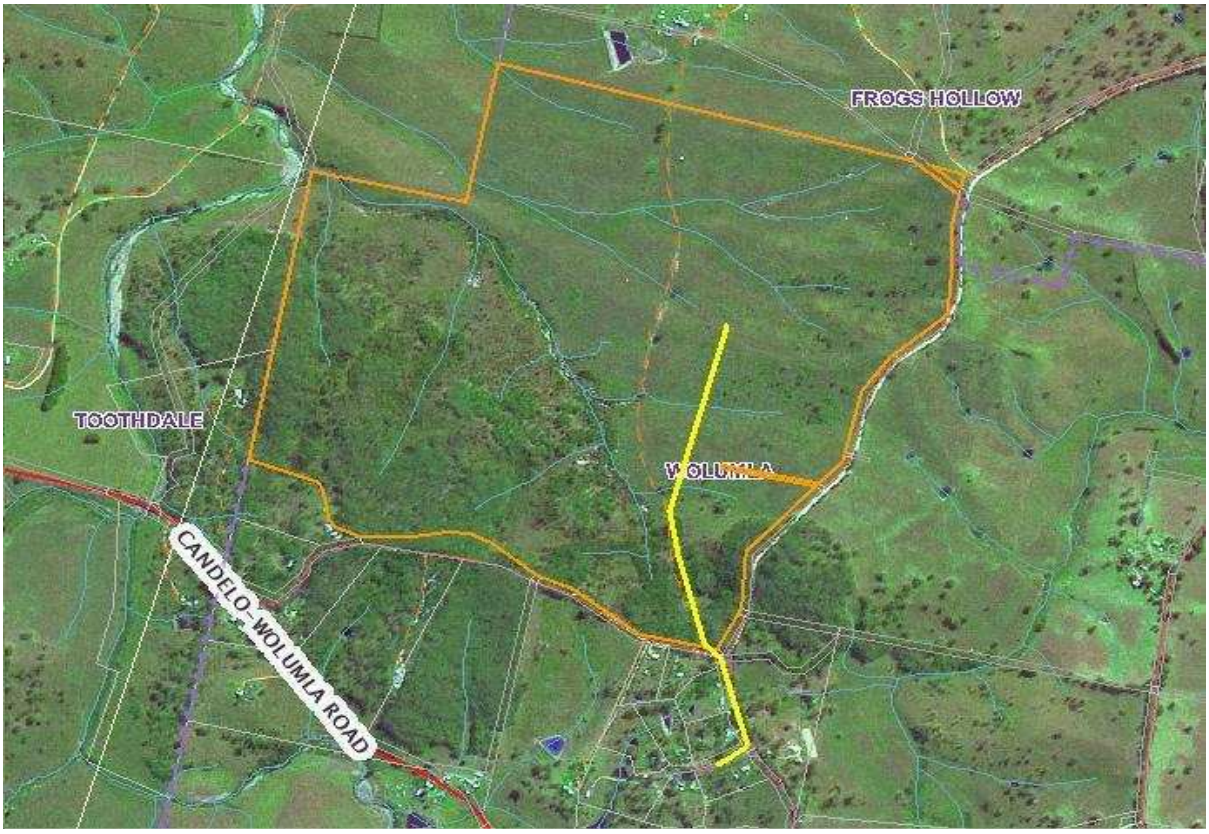

Plate 1: Option 1

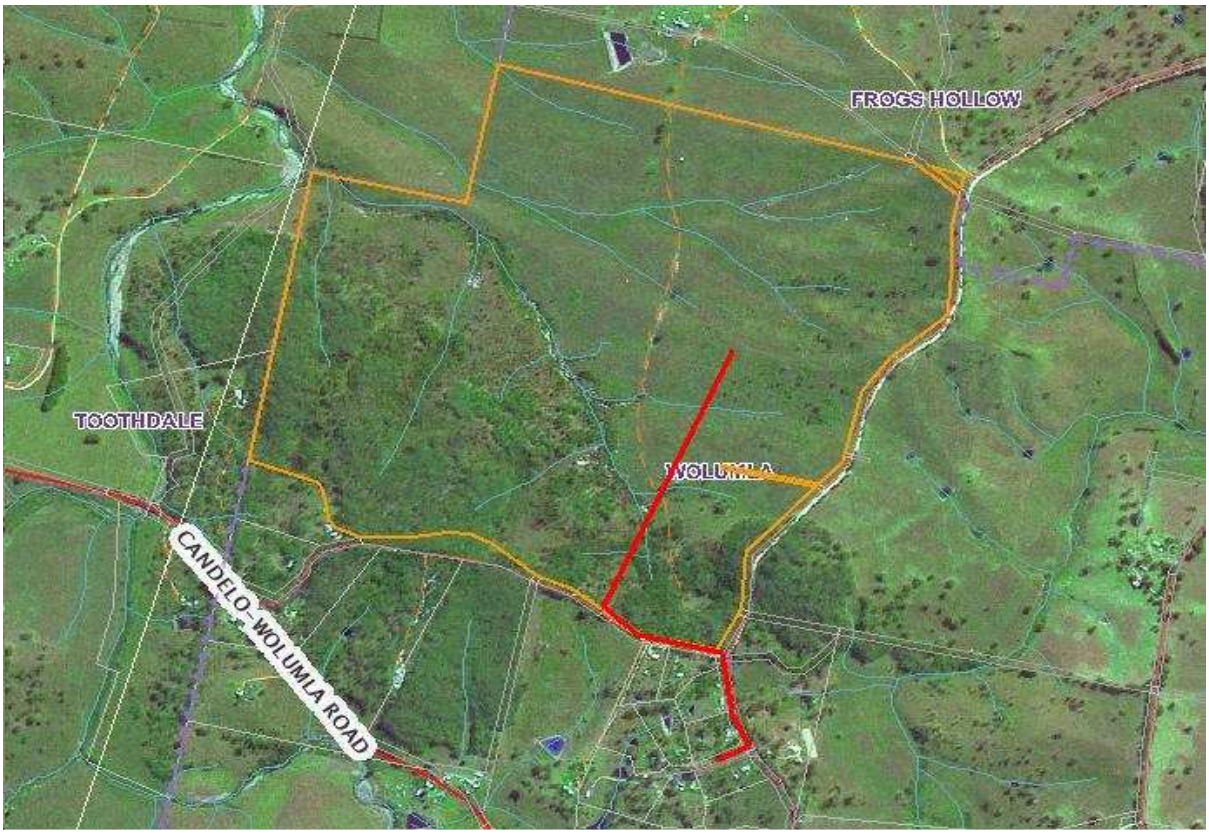

Plate 2: Option 2

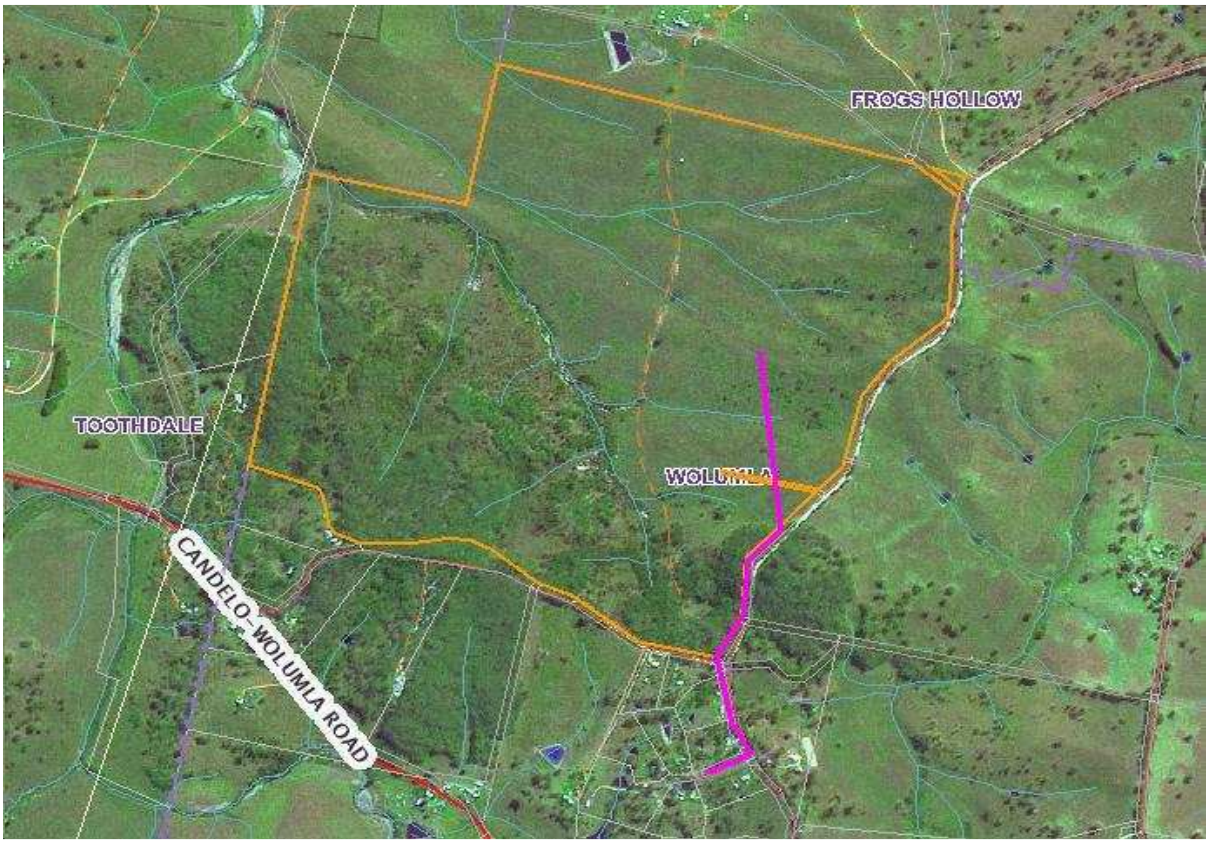

Plate 3: Option 3

Appendix D

ARA FUNCTIONS

APPROPRIATE REGULATORY AUTHORITY FUNCTIONS

The EPA is the Appropriate Regulatory Authority (ARA) for the proposed development, being a scheduled activity pursuant to the *Protection of the Environment Operations Act 1997* (POEO Act).

Section 91 of the EP&A Act triggers integrated development provisions of that Act by virtue of the development requiring both development consent and an Environmental Protection Licence (EPL) under the POEO Act (as it is a scheduled activity). Before Council can grant consent to the development it must obtain General Terms of Approval (GTAs) from the EPA for the EPL it proposes to issue.

Section 51(2) of the POEO Act states:

> *A decision by the appropriate regulatory authority on whether it will issue a licence, or on the general terms of a licence it proposes to issue, in relation to integrated development is subject to the provisions of this Chapter (including section 45).*

Section 45 of the POEO Act outlines the matters that the EPA must take into consideration in carrying out its licensing functions:

> *In exercising its functions under this Chapter, the appropriate regulatory authority is required to take into consideration such of the following matters as are of relevance:*
>
> *(a) any protection of the environment policies,*
>
> *(b) the objectives of the EPA as referred to in section 6 of the* Protection of the Environment Administration Act 1991*,*
>
> *(c) the pollution caused or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment,*
>
> *(d) the practical measures that could be taken:*
>
> *(i) to prevent, control, abate or mitigate that pollution, and*
>
> *(ii) to protect the environment from harm as a result of that pollution,*
>
> *(e) any relevant green offset scheme, green offset works or tradeable emission scheme or other scheme involving economic measures, as referred to in Part 9.3,*
>
> *(f) whether the person concerned is a fit and proper person (as referred to in section 83),*
>
> *(f1) in relation to an activity or work that causes, is likely to cause or has caused water pollution:*
>
> *(i) the environmental values of water affected by the activity or work, and*
>
> *(ii) the practical measures that could be taken to restore or maintain those environmental values,*
>
> *(g) in connection with a licence application relating to the control of the carrying out of non-scheduled activities for the purpose of regulating water pollution—whether the applicant is the appropriate person to hold the licence having regard to the role of the applicant in connection with the carrying out of those activities,*
>
> *(h) in connection with a licence application—any documents accompanying the application,*
>
> *(i) in connection with a licence application—any relevant environmental impact statement, or other statement of environmental effects, prepared or obtained by the applicant under the* Environmental Planning and Assessment Act 1979*,*
>
> *(j) in connection with a licence application—any relevant species impact statement prepared or obtained by the applicant under the* Threatened Species Conservation Act 1995 *or Part 7A of the* Fisheries Management Act 1994*,*
>
> *(k) in connection with a licence application, any waste strategy in force under the* Waste Avoidance and Resource Recovery Act 2001*,*
>
> *(l) in connection with a licence application:*

(i) *any public submission in relation to the licence application received by the appropriate regulatory authority under this Act, and*

(ii) *any public submission that has been made under the* Environmental Planning and Assessment Act 1979*, in connection with the activity to which the licence application relates, and that has been received by the appropriate regulatory authority,*

(m) *if the appropriate regulatory authority is not the EPA—any guidelines issued by the EPA to the authority relating to the exercise of functions under this Chapter.*

The objectives of the EPA as required to be considered under (b) above are as follows:

(1) *The objectives of the Authority are:*

(a) *to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development, and*

(b) *to reduce the risks to human health and prevent the degradation of the environment, by means such as the following:*

- *promoting pollution prevention,*
- *adopting the principle of reducing to harmless levels the discharge into the air, water or land of substances likely to cause harm to the environment,*
- *minimising the creation of waste by the use of appropriate technology,*
- *regulating the transportation, collection, treatment, storage and disposal of waste,*
- *encouraging the reduction of the use of materials, encouraging the re-use and recycling of materials and encouraging material recovery,*
- *adopting minimum environmental standards prescribed by complementary Commonwealth and State legislation and advising the Government to prescribe more stringent standards where appropriate,*
- *setting mandatory targets for environmental improvement,*
- *promoting community involvement in decisions about environmental matters,*
- *ensuring the community has access to relevant information about hazardous substances arising from, or stored, used or sold by, any industry or public authority,*
- *conducting public education and awareness programs about environmental matters.*

(2) *For the purposes of subsection (1) (a), ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:*

(a) *the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

In the application of the precautionary principle, public and private decisions should be guided by:

(i) *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*

(ii) *an assessment of the risk-weighted consequences of various options,*

(b) *inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*

(c) *conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:

(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(ii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

Therefore in providing its GTAs for the proposed EPL, it is reasonable to assume that the EPA has fully assessed the proposed development and is confident the development would not result in pollution of the environment.

Appendix E

CONSENT CONDITIONS

PRELIMINARY

Endorsed Plans

1. Development shall take place in accordance with the attached endorsed plans and reports:

   (a) *Bega Valley Shire Central Waste Facility Environmental Impact Statement* (Volumes 1, 2 and 3), prepared by AECOM, dated November 2009.

   (b) *Bega Valley Shire Central Waste Facility Environmental Impact Statement: Representations Report*, prepared by AECOM, dated April 2010.

   (*c)* As may be amended in red by the consent authority. Any specified amendments are to be incorporated in the Construction Certificate plans.

General Terms of Approval

2. The development shall be undertaken in accordance with the General Terms of Approval (GTAs) issued on 11 February 2010 by the (then) NSW Department of Environment, Climate Change and Water (DECCW) as attached to this consent.

Consultation – Public Authorities

3. The applicant shall consult with, as required:

   (a) Essential Energy

   (b) A local telecommunications carrier

   regarding their requirements for the provision of services to the development and the location of existing services that may be affected by proposed works, either on site or on the adjacent public road(s).

   Augmentation of any services to support the development would be the responsibility of and at the cost of the applicant.

General

4. A 2,000L rainwater tank shall be installed to capture roof water from the amenities building. It shall be plumbed for use within the amenities building. A 60,000L underground rainwater tank shall be installed to capture roof water from the maintenance shed building. At least 20,000L of this tank shall be provided as static supply for fire fighting, to the RFS's requirements. The remainder shall be available and shall be plumbed for use within the amenities building.

5. Any roof water collection for potable use on-site (i.e. office amenities) should be monitored for bacteriological and chemical quality. The monitoring and maintenance program for the rainwater tank(s) should be included in the facilities Operational Environmental Management Plan (OEMP).

6. An active landfill gas collection and flaring system shall be progressively installed as the landfilled waste is capped as described in the EIS and illustrated in Figures 1 and 2 attached to Appendix B of AECOM letter dated 8 June 2010.

Waste Management

7. All reasonable and feasible measures shall be implemented to recover resources from the waste stream before disposing any residual waste at the CWF.

8. The effectiveness of the resource recovery measures shall be monitored; and if necessary the waste strategy shall be adjusted to achieve better resource recovery rates.

Community Education Program

9. Prepare and implement a detailed Community Education Program for the project to promote better resource recovery.

Section 68 Approvals

10. No approval is given under Section 68 of the *Local Government Act 1993*. A separate application install and construct a system of on-site sewage management under Section 68 of the Local Government Act 1993 must be submitted to Council for approval. A plumbing and drainage design plan is to be submitted with the application to Council.

Leachate Disposal

11. No approval is given for the disposal of leachate other than:

    (a) Evaporation;

    (b) Irrigation within the leachate dam or within the active cell of the landfill; or

    (c) Disposal at a facility licensed to accept such waste.

    Irrigation of leachate within the active cell must only be undertaken such that ponding or run off does not occur.

    Once sufficient details of leachate generation and quality have been obtained through the monitoring required by Condition 12, application can be made to Council (and the OEH) to modify the means of disposal of the leachate.

12. A leachate monitoring program shall be undertaken quarterly during operation of the site as follows:

    (a) provide data that would assist with the minimisation of the volume and concentration of leachate;

    (b) minimise the leachate head build-up over the landfill liner; and

    (c) ascertain any correlation between leachate quality and impacted groundwater.

PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

The following conditions must be complied with prior to the issue of a Construction Certificate. In many cases the conditions require certain details to be included with or incorporated in the detailed plans and specifications which accompany the Construction Certificate:-

13. A Construction Certificate must be obtained from Council or an Accredited Certifier prior to work commencing. A construction certificate certifies that the provisions of Clauses 79A-79H of the Environmental Planning and Assessment Amendment Regulations, 1998 have been satisfied, including compliance with the Building Code of Australia and conditions of Development Consent.

Environmental Protection Licence

14. Prior to the Issue of **ANY** Construction Certificate for the development, the Environmental Protection Licence from the NSW Office of Environment and Heritage shall be obtained.

Compliance with BCA

15. All building work shall be carried out in accordance with the requirements of the Building Code of Australia. No work is to commence until such time as a Construction Certificate is obtained for the work/building permitted by this Consent.

Appointment of Council or a Private Certifier as the Principal Certifying Authority (PCA)

16. Either Council or a Private Certifier is to be appointed as the Principal Certifying Authority (PCA) for the development in accordance with Section 109E of the Act.

    Accordingly, wherever reference is made to the Principal Certifying Authority in this Consent, it refers to Council or the Private Certifier as chosen by you.

    Note: Once you have chosen either Council or a Private Certifier as the PCA, you cannot change from one to the other, or from one Private Certifier or another, without the approval of The Department of Planning and Infrastructure.

Building Works

17. Access and sanitary facilities for persons with disabilities are to be provided and maintained in accordance with the requirements of the Building Code of Australia and AS 1428 “Design for Access and Mobility”. Details of compliance are to be provided in the relevant plans and specifications accompanying the Construction Certificate application.

18. Roof storm water is to be disposed of to the satisfaction of the PCA.

19. The floors of wet areas shall be of an approved impervious material, properly graded and drained. The junctions of the floors with the walls shall be so treated as to prevent the penetration of moisture into the walls.

Civil Works

General

20. The following civil construction work shall be designed (Engineering Design plans submitted to Council for approval) and constructed in conformity with Council's Subdivision Guidelines and Technical Specifications (or other documents formally adopted by Council for the purpose of specifying standards for civil construction works, DCP No.2) as current at the date of the relevant Construction Certificate, and sound engineering practice.

21. The plans and specifications to which the Construction Certificate relates must conform to the conditions of this development consent, the standards set out in Council's Development Control Plans, Subdivision Guidelines and construction and design specifications and sound engineering practice.

22. Any levy payable under section 34 of the *Building and Construction Industry Long Service Payments Act 1986* must be paid before the Construction Certificate is issued.

23. Payment to Council of a security deposit for the making good of any damage caused to any Council property as a consequence of the doing of anything to which this consent relates. This security shall be provided in an amount of 5 per cent of the value of the construction works, either as a cash deposit or unconditional bank guarantee. A bond administration fee may also be payable to Council.

(Reason: Statutory requirements. See *Environmental Planning and Assessment Act 1979*, Sections 804, 81A and 109F and Environmental Planning and .Assessment Regulation 2000, Clauses 103 and 104.)

Qualifications and insurance of engineering designers

24. All civil construction work shall be designed by persons holding suitable qualifications for the design of works of this type and current professional indemnity insurance.

(Reason: to ensure appropriate professional standards.)

Contractor's insurance

25. Each contractor engaged in the construction of civil work must hold current public liability insurance for an amount of not less than $20,000,000 suitably endorsed to note the contractor and Council for their respective rights and interests.

Prior to the commencement of the construction of civil works Council must be provided with evidence of the currency of this insurance.

(Reason: to ensure that contractors hold suitable public liability insurance.)

Road Works

26. Design (full engineering design plans) and construction of a AUR/BAL intersection treatment at the junction of the proposed entry with Wanatta Lane in conformity with the standards specified in the Road Design Guide published by the NSW Roads and Traffic Authority. The design shall include the requirement for Safe Intersection Sight Distance for a speed environment 100km/h along Wanatta Lane.

The right turn treatment is to be in accordance with an AUR treatment, figure 4.8.24. The AUR is to be sealed. A verge in accordance with Section 3.6 of the Road Design Guide shall be constructed outside the AUR.

The left turn treatment is to be in accordance with a BAL treatment, figure 4.8.35. The BAL is to be sealed to a minimum of 10 metres from the edge of the traffic lane. The gate or grid at the entrance to the property shall be indented a minimum of 20 metres from the edge of the through carriageway.

The design shall ensure that no water is directed onto the formation of the through roadway Wanatta Lane. The applicant will be required to provide suitable drainage, including structures if necessary, underneath the driveway. Drainage headwalls shall be located outside the Clear Zone of the roadway. The width of the Clear Zone must be in accordance with Section 3.7 of the RTA's Road Design Guide.

The applicant shall submit detailed engineering plans, including drainage, at a scale of 1:200 to Council to be assessed for approval.

(Reason: To provide an appropriate standard of access to the land and to accommodate the traffic likely to be generated by this development).

27. Design (full engineering design plans) and construction of the following for the internal access road and parking areas:
    - 6.4 metre wide gravel road with a 6.0 metre wide bitumen seal,
    - 200mm thick compacted gravel pavement,
    - suitable vehicle turning facility at the western end of this road,
    - 1.5 metre wide table drains as necessary,
    - all associated stormwater and subsoil drainage works,
    - all other works necessary to achieve the above,

    (Reason: To provide an appropriate standard of access to the land and to accommodate the traffic likely to be generated by this development).

Stormwater Drainage Works

28. Design and construction of stormwater drainage works as necessary to convey stormwater flows within the development and downstream. Any design shall be in accordance with Council's Stormwater Drainage Design D5.

    Note: Appropriate easements shall be created to contain all drainage works that are located outside of roads and drainage reserves.

    (Reason: to provide for the drainage of the development, to protect public and private assets from potential damage and to minimize the environmental impacts of this development,)

29. Design and construction of stormwater drainage works as necessary to limit the peak stormwater discharge from the development to not exceed calculated flow rates for this site in an undeveloped state for rainfall events of up to a 1 in 20 year average recurrence interval. Any design shall be in accordance with Council's Development Design Specification D5, Stormwater Drainage Design, clause D5.15 - Retarding Basins.

    Note: Appropriate easements shall be created in favour of the lots benefited to contain all drainage works that are located outside of roads and drainage reserves.

    (Reason: to provide for the drainage of the development, to protect public and private assets from potential damage and to minimize the environmental impacts of this development.)

30. Design, construction and maintenance of all erosion and sediment control works necessary to ensure that the quality of stormwater discharged from this development site, both during and after the construction period, is similar to the quality of stormwater runoff from the site in an undeveloped state. These works shall be documented in a site specific Soil and Water Management Plan. These plans shall be in accordance with Council's Development Design Specification D7, Erosion Control and Stormwater Management.

    Note: Technical advice on the design, construction and maintenance of stormwater quality control measures is contained in *Managing Urban Stormwater: Soils and Construction* published by the NSW Department of Housing.

    Note: The responsibility for the maintenance of all works constructed for controlling stormwater quality shall remain with the developer until the Council authorizes the removal of temporary works or takes over the maintenance responsibility for permanent works.

    (Reason: to minimize the environmental impacts of this development.)

Car Parking

31. Fully detailed plans shall be provided for the car parking area prior to the issue of a Construction Certificate. Specifically the following shall be provided:

    (a) A minimum of ten (10) car parking spaces on site. All spaces shall be designed in accordance with AS2890.1 and 2890.2.

    (b) Construction of the car park area shall be undertaken in accordance with Section 7.3 of DCP No. 7.

Landscape Management Plan

32. A Landscape Management Plan shall be prepared as part of the LEMP, detailing landscaping requirements. Landscaping is to incorporate the use of suitable endemic species and be consistent with the landscape screening outlined in the EIS.

Electricity Connection

33. Electricity services required to be augmented to service the proposed development would be the responsibility of and at the cost of the applicant. Prior to the issue of a construction certificate, evidence shall be provided to Council that consultation has been undertaken with Country Energy and the development can be supplied with adequate electricity supply.

Soil and Water Management Plan (SWMP)

34. A Soil and Water Management Plan (SWMP) shall be prepared for the proposed development and submitted to council for approval prior to the issue of any Construction Certificate for the development. The SWMP shall be consistent with the measures outlined in Section 7 of GHD's *Stormwater Management Plan for the Landfilling Operation* (Appendix M of EIS).

35. The following measures shall be incorporated into the SWMP (in addition to those outlined in Appendix M of the EIS):

    (a) The perimeter control measures are to be established prior to the first phase of earthworks.

Landfill Environmental Management Plan (LEMP)

36. A Landfill Environmental Management Plan (LEMP) shall be prepared and submitted to Council prior to the issue of any Construction Certificate. The LEMP shall be consistent with the mitigation measures outlined in Section 24 in the EIS and shall incorporate the following matters:

    (a) In the event that odour complaints are received once the facility has commenced operation, the options outlined in Section 9.7 of the EIS shall be incorporated into the LEMP for the development.

    (b) The measures outlined in Section 5.14.3 of the EIS to manage litter shall be included into the LEMP.

    (c) The LEMP shall include screening and recording procedures in accordance with the EPA's *Solid Waste Landfills*.

    (d) The following measures shall be implemented into the LEMP and adopted during construction works:

        (i) During times of high wind, all construction works to cease.

        (ii) Any stockpiles existing on site for a period longer than 3 months are to be revegetated, with vegetation being maintained.

        (iii) Establish a complaints register and follow up procedures including required corrective actions.

    (e) The LEMP shall require adoption of the SWMP during construction works.

    (f) The RFS's requirements shall be incorporated into the LEMP, being:

(i) Trails for bush fire management should be maintained across the site including boundary trails for the protection of fences and to help prevent the spread of bush fire to or from the site.

(ii) An internal trail network developed in consultation with the RFS should allow for hazard reduction burning in segments.

(iii) The prescribed burning of the land management area should be planned in a mosaic pattern i.e. which areas will be burnt and at what interval needs to be documented in the management plan.

(iv) Grazing could be considered to reduce surface fuels where appropriate around the site.

(v) Fire management should comply with Section 5.5.12 of Environmental Impact Statement, Volume 1 Main Report.

(g) If the audible alarms used on site are considered to be a source of disturbance to neighbours, then the alarm level will be checked against the appropriate regulatory health and safety requirements. Mitigating action will be taken to achieve acceptable noise reduction without compromising safety standards.

Mitigating action could include use of alternatives to the traditional tonal pulse (beeper) alarms. Alternatives include broadband alarms ("quackers"), directional and self adjusting alarms. Such alternatives could be introduced subject to a risk assessment.

Traffic Control Plan (TCP)

37. No work shall be carried out within three metres of the carriageway of a public road subject to motor vehicle traffic until Council has approved a satisfactory Traffic Control Plan relating to that work, and the Roads and Traffic Authority has approved any associated Roadworks Speed Limit.

The Traffic Control Plan shall be prepared by a person who is authorised by the Roads and Traffic Authority to prepare these plans. The Traffic Control Plan must bear the name, signature and Traffic Control at Worksites Certificate Number of the person who prepared it.

All measures described in the Traffic Control Plan shall be implemented and maintained for the duration of any work within or adjacent to the road carriageway.

(Reason: so that work on public roads is performed safely.)

Litter Management Structure

38. Fully detailed plans of the litter management structure shall be submitted to and approved by Council prior to the issue of a Construction Certificate. The structure shall be consistent with the plans incorporated in the EIS.

Gas Flaring System

39. Fully detailed plans of the gas flaring system shall be submitted to Council prior to the issue of a Construction Certificate. The system shall be as described in the EIS and consistent with Figures 1 and 2 attached to Appendix B of AECOM's letter dated 8 June 2010.

PRIOR TO WORKS COMMENCING

The following conditions are to be complied with prior to any works commencing on the site:

Appointment of Principal Certifying Authority and Notification of Commencement of Work

40. Construction work in accordance with this development consent must not be commenced until:

- Construction Certificate for this civil construction work has been issued by:
  - the council, or
  - an accredited certifier, and
- the person having the benefit of this development consent:
  - has appointed the Council as Principal Certifying Authority for this development, and
  - has notified the Council of this appointment (see below), and
- the person having the benefit of this development consent has given at least 2 days notice to the Council of the person's intention to commence the civil construction work.

  The notification to Council of appointment of the Principal Certifying Authority and intention to commence work must be submitted on the form prepared by the Council for that purpose.

41. The notification to Council of appointment of the Principal Certifying Authority must contain the following information:

- the name and address of the person by whom the notice is being given, and
- a description of the work to be carried out, and
- the address of the land on which the work is to be carried out, and
- the registered number and date of issue of this development consent, and
- the name and address of the Principal Certifying Authority (Council).

42. The notice to Council of intention to commence the civil construction work must contain the following information:

- the name and address of the person by whom the notice is being given, and
- a description of the work to be carried out, and
- the address of the land on which the work is to be carried out, and
- the registered number and date of issue of this development consent, and
- the registered number and date of issue of the relevant Construction Certificate, and
- a statement signed by or on behalf of the Principal Certifying Authority (Council) to the effect that all conditions of the consent that are required to be satisfied prior to the work being commenced have been satisfied, and
- the date on which the work is intended to commence.

Fencing of Sites

43. Fencing of sites is required to prevent public access when the site is unoccupied and building works are not in progress. In this regard the MINIMUM acceptable standard of fencing to the site is properly constructed chain wire fencing 1.8m high, clad internally with Hessian or Geotextile fabric. All openings are to be provided with gates, such gates are not at any time to swing out from the site or obstruct the footpath or roadway.

Signs to be Erected on Sites

44. A sign must be erected in a prominent position on any site on which building work, subdivision work or demolition work is being carried out:

    (a) showing the name, address and telephone number of the Principal Certifying Authority for the work, and

    (b) showing the name of the principal contractor (if any) for any building work and a telephone number on which that person may be contacted outside working hours and at any time for business purposes, and

    (c) stating that unauthorised entry to the work site is prohibited.

    The sign must be rigid and durable and be read easily by anyone in any public road or other public place adjacent to the site.

    Any such sign is to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

    Note: Principal Certifying Authorities and Principal Contractors must also ensure that signs required by this clause are erected and maintained (clause 227A of the Regulations currently imposes a maximum penalty of $1,100).

Toilet Facilities

45. Closet accommodation for construction workers shall be provided prior to site works commencing.

Landscaping

46. Establishment of landscape and boundary plantings along the site boundaries, in accordance with the approved Landscape Management Plan.

Site Preparation Works

47. Establishment of chain link fencing surrounding the site with mesh screening.

Heritage Management

48. All contractors are to be made aware of the General Recommendations of the Heritage Impact Assessment in the EIS prior to commencing site works.

49. All contractors who work within the confines of the study area should be made aware of the NP&W Act 1974 (as amended) and the fact that it is an offence to move, disturb or destroy Aboriginal objects without the written permission of the Director-General of the DECCW.

50. All contractors who work within the confines of the study area should be made aware of the *NSW Heritage Act 1977* and the fact that it is an offence to move, disturb or destroy a relic or deposit as defined by the Act.

Grazing Plan

51. A Grazing Plan for areas outside the CWF footprint shall be prepared to ensure desired conservation outcomes are achieved. This plan shall be consistent with Sections 12.1.5 of the EIS.

Rehabilitation and Management Plan

52. A Rehabilitation and Management Plan shall be developed for the rehabilitation and long-term management of the remnant vegetation existing to the south west of the property. This plan shall be consistent with Sections 12.1.5 of the EIS.

Wanatta Lane Upgrade

53. To ensure the safety of road users, Wanatta Lane shall be upgraded in accordance with the *Review of Environmental Factors: Proposed Road Widening Wanatta Lane, Wolumla* prepared by Eco Logical Australia Pty Ltd, prior to any works commencing on site.

DURING CONSTRUCTION

The following conditions are applicable during construction/works:-

Endorsed Plans & Specifications

54. A copy of the endorsed stamped plans and specifications, together with a copy of the Development Consent, Construction Certificate and approved LEMP and Traffic Management Plan are to be retained on site at all times.

Environment Protection Licence

55. All construction works shall be in accordance with the Environment Protection Licence (EPL) issued by the NSW Office of Environment and Heritage (OEH).

Hours of Work

56. For the purpose of preserving the amenity of neighbouring occupations, construction work shall be confined to normal working hours, mainly 7am to 5pm Mondays to Fridays and 8am to 1pm Saturdays (no work on Sundays or Public Holidays).

Sediment & Erosion Measures

57. All soil erosion measures required in accordance with the approved Soil and Water Management Plan and any other relevant conditions of this Consent are to be put in place prior to commencement of construction works are to be maintained during the entire construction period until disturbed areas are restored by turfing, paving or revegetation.

Landscaping

58. The landscape screen plantings along the site boundaries shall be monitored and maintained throughout construction to ensure their survival and continuous growth.

Heritage Management

59. Aboriginal objects are protected under the NP&W Act, regardless of location. Should any objects be identified during the course of site works, all works must cease and the DECCW (Southern Branch, Environment Protection and Regulation Division, Regional Archaeologist) contacted in regard to appropriate permit requirements before any further impact is undertaken.

60. Should **suspected** skeletal material be uncovered during the course of site works, all works must cease and the DECCW, the NSW Police and the NSW Coroner's office contacted immediately, **regardless** of any existing DECCW permits for the proposed development.

61. The *NSW Heritage Act 1977* affords protection to non-Indigenous "relics" and in situ archaeological deposits over 50 years old. If the program of work uncovers an object of European or other non-Indigenous manufacture or a deposit that is associated with European or other non-Indigenous occupation, and that object or deposit is more than 50 years old, then work must cease and contact made with the NSW Heritage Office to seek advice.

Compliance with Critical Stage Inspections and other Inspections nominated by the Principal Certifying Authority

62. Section 109E(d) of the Act requires certain specific inspections (prescribed by clause 162A of the Regulations) and known as 'Critical Stage Inspections' to be carried out for building work.

Prior to permitting commencement of the work your Principal Certifying Authority is required to give notice of these inspections pursuant to clause 103A of the Regulations.

N.B. An Occupation Certificate cannot be issued and the building may not be able to be used or occupied where any mandatory critical stage inspections or other inspections required by the Principal Certifying Authority are not carried out.

Where Council is nominated as Principal Certifying Authority, notification of all inspections required is provided with the Construction Certificate approval.

63. Where Council is the PCA a minimum of TWO WORKING DAYS NOTICE shall be given by the Builder to PCA to enable inspections to be carried out at each of the following steps where applicable:-

(a) Pier holes before concrete is poured

(b) Steel reinforcement for footings, slabs or other structural concrete components prior to placement of concrete

(c) Bearers and joists, and damp courses before the floor is laid

(d) When wall and roof framing is erected, bracing and tie downs is in place.

(e) Flashing of wet areas prior to lining or tiling of these areas (viz: bathrooms, en-suites, laundries and water closets)

(f) When the building is completed and ready for approval to occupy

(g) Storm water drainage under hydrostatic test and prior to backfill inspections

(h) At any other stage during construction deemed as being required by the Principal Certifying Authority

NOTE:

- It should be noted that if work that needed a mandatory critical stage inspection was covered without the inspection taking place, then the **only way to enable the issuing of an occupation certificate maybe for the builder to uncover the work** so that the required inspection can take place.
- Approval shall be obtained from the PCA at each inspection stage prior to further works proceeding.

64. A minimum of TWO WORKING DAYS NOTICE shall be given by the Builder to Council to enable inspections to be carried out at each of the following steps where applicable: -

(a) When sanitary drainage is laid ready for test.

(b) Prior to backfilling of land application areas.

(c) Prior to commissioning of systems of on-site sewage management before occupation of the premises.

NOTE: Approval shall be obtained from Council at each inspection stage prior to further works proceeding.

65. It is the owner's responsibility to ensure that the building is located on the correct block of land is located free of any easements/services and satisfies the necessary setbacks as specified by Council's Codes for Local Government Legislation.

66. Signs to be provided at the front of the property or in a prominent location **PRIOR** to the first inspection: -

(a) Owner's name, lot number and street number

(b) A rural address number is to be provided at the entrance of a property (eg. affixed to an entrance gate)

(c) Signage to clearly identify the Principal Certifying Authority (PCA) and contact number

(d) That unauthorised entry to the work site is prohibited; and

(e) The Principal Contractor (the coordinator of the building work).

Certification and inspection of civil construction work

67. The civil construction works must be inspected and tested either by Council's inspector, or by an Accredited Certifier (PCA) at each of the following stages of construction listed below to confirm compliance with the standards set out in Council's Technical Specification for Civil Engineering Works.

Before the endorsement of the Occupation Certificate for this development, a Completion of Engineering Works Certificate must be obtained from Council (where Council is the PCA), to demonstrate that all civil construction works have been completed.

Where Council is not the PCA, documentary evidence shall be provided by the PCA to Council demonstrating compliance with the following.

- After placement of all signs and control measures in accordance with the approved Traffic Control Plan.
- After stripping of topsoil from roads and fill areas, all Soil & Water Management Plan controls shall be in place at this stage.
- After completion of road subgrade.
- After placement and compaction of each layer of gravel pavement material.
- During application of bitumen seal or asphaltic concrete wearing surface,
- After laying and jointing of all stormwater pipelines prior to backfilling.
- After completion of works.
- As otherwise required to confirm that the works are satisfactorily executed and in conformity with environmental controls.

It should be noted that Council charges fees for inspections and certificates. These fees must be paid prior to the endorsement of an Occupation Certificate.

(Reason: to demonstrate that civil construction works are completed in conformity with development consent conditions and to appropriate technical standards)

Landfill Environmental Management Plan

68. The LEMP submitted to and approved by Council as part of the Construction Certificate, shall be implemented and adhered to during construction of the facility.

PRIOR TO ISSUE OF OCCUPATION CERTIFICATE/USE/OPERATION OF THE FACILITY

The following conditions are to be complied with prior to the issue of an interim/final occupation certificate/use or operation of the facility:-

General

69. A final **Occupation Certificate** must be issued by the Principal Certifying Authority prior to occupation or use of the development. In issuing an occupation certificate, the Principal Certifying Authority must be satisfied that the requirements of Section 109H of the *Environmental Planning and Assessment Act 1979* have been satisfied.

70. Documentary evidence and/or certificate of compliance must be submitted to Council to show that all works have been completed in accordance with this Development Consent and its accompanying Construction Certificate.

Transport Code of Conduct

71. A Transport Code of Conduct (TCOC) shall be prepared and approved by Council prior to issue of any Occupation Certificate for or use of the site for the purpose of a waste management facility. The TCOC shall require all deliveries and vehicle movements associated with the waste facility to occur outside of school bus operation hours.

Defects liability period for civil construction works

72. The developer shall remedy any defects in the civil construction works arising within six months after the completion of the works and shall make good any damage caused to any Council property as a consequence of doing anything to which this consent relates.

73. If the Occupation Certificate is issued prior to the expiry of this period, the Council must first be provided with a security deposit or unconditional bank guarantee in a form acceptable to Council, in an amount of five percent (5%) of the value of the civil construction works. This amount is security for remedying any defects in the civil construction works that arise within six months after the works are completed, and for making good any damage caused to Council property as a consequence of the doing of anything to which the consent relates. The funds realised from this security may be paid out by Council to meet any costs referred to in paragraph (a) above. A Bond Administration Fee may be payable to Council.

    This condition is authorised by Section 804(6)-(10) of the *Environmental Planning and Assessment Act 1979*.

    (Reason: to ensure that civil construction works are in satisfactory condition when transferred to Council and that any damage to Council property is remedied.)

Engineer's certification - specific works

74. Prior to the endorsement of the Occupation Certificate for this development, Council shall be provided with certification from a suitably qualified and experienced Chartered Professional Engineer (NPER 3 registered) confirming that the works identified in condition(s) relating to stormwater detention along with erosion and sediment control satisfy the specified performance and acceptance criteria.

    (Reason: to demonstrate compliance with consent conditions).

Extended maintenance responsibility

75. The developer shall perform all works necessary to maintain all erosion and sediment control measures for this development to effectively control potential soil erosion, sedimentation and other environmental impacts until all civil construction work has been completed, stabilised, revegetated and directed by council for removal.

    Particular attention is required to the regular removal of accumulated material in sediment traps and water quality control ponds.

    Prior to the endorsement of the Occupation Certificate, the developer shall lodge with the Council a security deposit or unconditional bank guarantee in a form acceptable to Council, in an amount of $50,000 as security for satisfactory performance of the developer's responsibilities under this condition. The funds realised from this security may be paid out by Council to meet any costs incurred by Council in performing works referred to in this condition. A Bond Administration Fee may be payable to Council.

    (Reason: to minimise the environmental impacts of this development)

Fire Safety Certificate

76. A Final Fire Safety Certificate must be issued for the building prior to the issue of an Occupation Certificate. As soon as practicable after a Final Fire Safety Certificate is issued, the owner of the building to which it relates:

    (a) must cause a copy of the certificate (together with a copy of the current fire safety schedule) to be given to the Commissioner of New South Wales Fire Brigades, and

    (b) must cause a further copy of the certificate (together with a copy of the current fire safety schedule) to be prominently displayed in the building.

DURING USE/OPERATION OF THE FACILITY

The following conditions are to be complied with during operation of the site/facility:-

Environment Protection Licence

77. The development shall be operated in accordance with the conditions on the Environment Protection Licence (EPL) issued by the NSW Office of Environment and Heritage (OEH).

Hours of Operation

78. For the purposes of preserving the amenity of neighbouring occupations and residents, hours of operation are to be restricted to between:-

    – 8:00am and 5.00pm Monday to Saturday; and
    – No operation on Sundays.
    – Or as otherwise described by the EPL issued by the OEH.

Landfill Environmental Management Plan (LEMP)

79. The LEMP submitted to and approved by Council as part of the Construction Certificate, shall be implemented and adhered to during operation of the facility.

Annual Fire Safety Statements

80. The owner of a building, to which an essential fire safety measure is applicable, shall provide Council with an annual fire safety statement for the building. The annual fire safety statement for a building must: -

    (a) deal with each essential fire safety measure in the building premises, and

    (b) be given: -

        (i) within 12 months after the last such statement was given, or

        (ii) if no such statement has previously been given, within 12 months after a final fire safety certificate was first issued for the building.

Landscaping

81. The landscape screen plantings along the site boundaries shall be monitored and maintained throughout the operation of the facility to ensure their survival and continuous growth in accordance with the Landscape Plan provided in the LEMP.

Litter Management Structure

82. No landfilling operations shall on site until the litter management structure is installed as approved in the Construction Certificate. No landfilling operations shall occur on site without the use of the litter management structure.

Soil and Water Management Plan

83. The Soil and Water Management Plan shall be implemented throughout the operation of the facility.

ADVISORY NOTES

Appeal Rights

A. Section 97 of the Act provides that an applicant who is dissatisfied with the Council's determination of the Development Application may appeal to the Land and Environment Court within twelve (12) months of the date of determination, or as otherwise prescribed.

Review Rights

B. Section 82A of the Act provides that an applicant may request, within twelve (12) months of the date of determination of the Development Application, that the Council review its determination (this does not apply to integrated or designated development). A fee is required for this review.

Commonwealth Disability Discrimination Act 1992

C. The applicant and Owner are advised that the Commonwealth Disability Discrimination Act 1992 may apply to this particular proposal. Approval of this application does not imply or confer compliance with this Act. Applicants and owners should satisfy themselves as to compliance and make their own enquiries to the Human Rights and Equal Opportunity Commission. Attention is also drawn to the provisions of Parts 2, 3 and 4 of Australian Standard 1428 - Design for Access and Mobility.

Construction Certificate

D. A Construction Certificate shall be obtained in accordance with Section 81A (2)(a)of the Act, prior to the commencement of any work on site. Council can provide this service for you.

Occupation Certificate

E. An Occupation Certificate is to be issued by the Principal Certifying Authority prior to the occupation of the building.