Submission S083

Issue Number	Topic	Response
S083_1	H1	Your submission to the Referrals Section (EPBC Act) has been noted. DSEWPC (formerly DEWHA) has previously considered the public submissions received from Council's referral and determined that the proposal constitutes a controlled action. The EA was then prepared to identify those mitigation measures which would be implemented in order to ensure the action will not have a significant impact on the GRAWHA.
SO83_2	W1	The proposed landfill is located within the upper reaches of the catchment and runoff from the proposed landfill site falls to the north towards a tributary of the Gara River. The proposed landfill and containment ponds are outside the extent of the 100 year floodplain. In addition, the diversion drains that collect both the "clean" and "dirty" stormwater runoff will be designed to convey the peak flows from the 1 in 100 year ARI storm event from the catchment. The leachate and stormwater ponds (Dry Basin) incorporate adequate freeboard to contain 100 year ARI flows on site. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. Although unlikely, if leachate contamination is detected in monitoring wells (refer Surface and Groundwater Monitoring Program and Management Plan appended to the LEMP, **Appendix B** of the EA), appropriate remediation measures would be implemented to prevent impacts to the Gara River.
SO83_3	P3	The Draft Strategic Plan (2011-2021) sets out the strategic objectives for the Council and includes a commitment to maintaining the *provision of quality sustainable public utilities that are safe, affordable and environmentally responsible*, including provision of effective waste management services. The proposed new landfill is part of a strategy for managing waste produced in the Armidale region in the long term. The proposed landfill forms a key component of Council's Waste Strategy (2010), which has the objective of providing *waste collection and disposal services to maximise reuse of materials and to minimise waste to landfill in order to:* • *Protect public health;* • *Conserve scarce natural resources;* • *Take better care of the environment.* As part of an integrated and strategic approach to waste management, Council has considered the implementation of various AWT technologies, including MBT, thermal treatment or a combination of both MBT and thermal treatment. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate. A review of the costs of AWT technologies would be undertaken should the trial be successful and more accurate costing information is available based on its trial and adoption at the existing facility.
SO83_4	FF5 FF1	An assessment of biodiversity including potential impacts of the proposed landfill facility on threatened species such as the Box-gum woodland and threatened birds was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The proposed works would involve clearing of less than 1 ha of Box gum woodland, 12.7 ha of the regrowth Stringybark woodland and approximately 3.3 ha of ground cover. The impacts will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset). Mitigation measures to minimise impacts of clearing on flora and fauna, including threatened species such as koalas and rare birds, will be documented in a suite of management plans including a VMP, Biodiversity Offset Management Plan (**Appendix H** of the EA), Vegetation Clearing Protocol and Native Fauna Management Plan. Further details of the contents of these plans are provided in Section 4 of the Flora and Fauna Assessment (**Appendix E** of the EA). These plans will be developed during detailed design of the landfill and prior to construction. The plans would be prepared in consultation with relevant government agencies (e.g. DECCW and DSEWPC) and in accordance with best practice guidelines and Recovery Plans for threatened species.
SO83_5	W1	Management measures proposed for the landfill are designed to prevent dirty water runoff during construction and operation of the proposed landfill facility. Mitigation measures include a geosynthetic liner system, water management system and leachate barrier and collection system. These measures have been designed in accordance with the DECCW Landfill Guidelines Benchmark Techniques. With the implementation of environmental controls and mitigation measures to manage dirty stormwater runoff, leachate containment and emergency storage, the magnitude of impacts to surface water, including drinking water, would be negligible.
SO83_6	H1	The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). The Commonwealth determined that the proposal constitutes a controlled action under the EPBC Act, however proposed environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching downstream would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.
SO83_7	W4	The landfill and pond design are based on recommended DECCW Landfill Guidelines Benchmark Techniques. The combination of composite landfill liner with a leachate collection system ensures maximum prevention of leachate leakage from the landfill into the surrounding environment. A review of available literature on the efficiency of different landfill linings was undertaken (refer **Appendix I** for detailed study).In general, leachate collection and conveyance systems have a finite life ranging from under 70 years to over 200 years, however a higher operational life can be achieved by installing in accordance with the construction specifications and protection of the liners during and after construction. The Landfill Environmental Management Plan that has been prepared for the site will dictate efficient operation and management of the landfill to ensure landfill structures are used appropriately and the risk of leachate leakage from the landfill site is minimised. Council would be required to monitor the site until leachate generation ceases and comply with other post-closure conditions as specified by the EPL and/or approval conditions. Council is committed to monitoring and rehabilitating the site and the proposed offset area post-closure for a time yet to be specified in any approvals.

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SO83_8	AQ4	GHG emissions are addressed in Section 8.6 of the EA The amount of landfill gas that would be generated by the landfill is dependent on the fraction of putrescible waste (food, paper, nappies) in the waste stream. It is Council's longer term objective to operate the landfill as a General Solid Waste (non-putrescible) landfill, when appropriate off-site sorting and treatment technologies are implemented. Suitable options to manage landfill gas have been considered and include: • The application of a methane oxidation cap • Passive venting and using a filter (e.g. activated carbon or the like) to reduce emissions • Actively collecting the landfill gasses with a landfill gas collection system and flaring the methane (combustion conversion to CO2) The most suitable option will be determined by the volume of landfill gas that is produced once the landfill is operational. The amount of methane generated by the proposal will be monitored and assessed to determine the most appropriate management of the gas.
SO83_9	N3 AQ1 V3 O2 V2	An assessment of noise impacts was undertaken and is summarised in **Section 8.7** of the EA. With the implementation of noise mitigation measures the proposed development would comply with the environmental criteria for the site under the neutral meteorological conditions that have been shown to be typical of the site, with minimal impacts to noise level amenity. Odour emissions from the site are predicted to be within acceptable levels at the nearest receiver and at the boundary of the site (**Section 8.5** and **Appendix O** of the EA. Standard management strategies for landfill sites would be employed including sub surface and surface gas monitoring and the daily covering of waste. A complaints hotline would be set up in accordance with EPL requirements. Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained. Total dust emissions due to the operations at the proposed landfill facility have been estimated by analysing the excavation and landfilling operations for three stages of the proposed landfill. Predictions of dust generation were very low and it was concluded that the proposed activities would be unlikely to cause exceedances of the DECCW air quality criteria. Overall, dust concentrations and deposition levels at all residential receivers were very low and is was concluded that air quality impacts arising from dust emissions from the proposed landfill facility would be negligible. Pest and vermin monitoring would be undertaken on a regular basis at the Project Site. Daily cover of the landfill would also discourage vermin and reduce odour emissions. Should the proposed techniques be unsuccessful in deterring pests and vermin, further investigations for additional measures would be undertaken such as engaging a firm of specialist exterminators if required.
SO83_10	SE3	The proposed landfill facility would utilise the Waterfall Way as an access route. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that the Waterfall Way is an existing haulage route for several existing facilities in the region. It is considered views from Waterfall Way would be partially masked by existing vegetation and further masked by vegetation of the offset area once matured. It is not expected the proposed landfill facility would significantly affect or impede tourism in the area. It is noted that Council supports and will continue to support the promotion of tourism in the region through the Tourism Information Centre, provision of funding for local community infrastructure including public facilities for

		tourists and sponsorship of events to promote tourism in the region.
SO83_11	SE2	Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of downstream impacts to surface and groundwater. Impacts on the recreation values of the Blue Hole are unlikely. Water quality monitoring would be undertaken downstream of the proposed landfill (upstream of the Blue Hole).
SO83_12	P3 E3	As part of an integrated and strategic approach to waste management, Council have considered the implementation of various AWT technologies, including MBT, thermal treatment or a combination of both MBT and thermal treatment. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate. A review of the costs of AWT technologies would be undertaken should the trial be successful and more accurate costing information is available based on its trial and adoption at the existing facility. As part of the site selection process, over 50 sites were evaluated since the mid-1990s. Sites were identified through several preliminary investigations involving consultation with Real Estate agents regarding availability for sale of appropriate sites, consultation with the Department of Mineral Resources regarding the availability of current and former extractive industry sites and consideration of sites within appropriate geological areas. The principles outlined in the document *Landfilling – EIS Guidelines* (DUAP, September 1996) were then used to develop appropriate criteria and weightings for the assessment of the potential landfill sites identified from the preliminary investigations. The *Regional Landfill Siting Study Final Report* (Maunsell, 2004) was appended to the EA (refer **Appendix C** of the EA). This concluded that the current site was the most suitable of the sites considered with respect to the assessment criteria determined as part of the site selection process.
SO83_13	SE4	The estimated cost for the construction of the landfill is $14 million for the first two cells (which includes water and leachate collection and management systems, access road, amenities) and $10 million for the remaining three cells, a total of $24 million over the life of the landfill. The annual operational cost is likely to be in the order of $1 million per year.
S083_14	O1 HR2	Substances such as mercury and dioxin compounds are not expected to be produced within the landfill due to the type of waste received – no hazardous or chemical waste would be received. As such, the release of these compounds would not occur. Actively collecting landfill gasses with a landfill gas collection system and flaring the methane has been considered an option for the future of the landfill with regard to management of landfill gas. Other options include: • The application of a methane oxidation cap; and • Passive venting and using a filter (e.g. activated carbon or the like) to reduce emissions. The most suitable option would be implemented at the proposed landfill facility however this would not be known until the facility has been in operation and once accurate quantities of gas produced by the landfill have been determined. The proposed development would not pose a significant risk to human health during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither hazardous nor offensive discharges from the development site would occur.

		Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.
S083_15	V3	Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained.
S083_16	W4 O1	The mitigation measures provided in the EA are considered sufficient to contain all dirty water runoff and leachate on site. The potential for the leaking of leachate from the landfill has been assessed in **Section 8.3** and **8.4** of the EA. Considering a worst-case scenario in the event leachate escaped the landfill, concentrations into the downstream water environment would be diluted to negligible levels. It is considered that the proposed development would not pose a significant risk to human health or the biophysical environment, either during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither hazardous nor offensive discharges from the development site would occur. Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.

[redacted]

Armidale 2350.

To Whom it May Concern

Please accept this CD as our personal objection to the Armidale Landfill Proposal.

Yours Sincerely.

[redacted]

Submission S084

Issue Number	Topic	Response
S084		The CD representing your submission has been accepted. The response to the submission is consistent with the response to Submission S002 presented earlier in this Submissions Report.

THE WILDERNESS SOCIETY

Delivered by Fax: 9228 6466

**SUBMISSION TO THE NSW DEPARTMENT OF PLANNING
RE THE PROPOSED ARMIDALE LANDFILL PROJECT**

**FROM THE WILDERNESS SOCIETY (Sydney) INC
August 10, 2010**

The Wilderness Society is opposed to the proposed creation of a land fill facility upstream from the Oxley Wild Rivers National Park, part of the World Heritage-listed Gondwana Rainforests of Australia. Having campaigned long and hard for the protection of the Oxley Wild Rivers National Park and the associated wilderness areas, the Wilderness Society believes this is an inappropriate land use in the catchment of one of our great natural treasures. The Society welcomes the opportunity to make a submission to the NSW state planning and EPBC assessment process. S085_1

The Wilderness Society support the work of the local community in opposition to the dump but will limit its comments to the implications for Australia's World Heritage responsibilities.

The EPBC focuses on values not places in relation to ensuring Australia fulfils its obligations to the World Heritage treaty. This is often cited as a weakness by conservationists. The concern is that this approach can allow large and inappropriate development within a World Heritage area if it is not deemed to impact on one of the "values" for which the area has been declared World Heritage. Conservationists argue that World Heritage places, not just their values need to be protected.

The defence from government has always been that while the focus on values could lead to a minimalist approach to World Heritage protection, it can also ensure that impacts outside the World Heritage boundary are considered and managed. Most famously, in the case of Booth v Bosworth (2001), the killing of threatened species on private land was stopped as it had impacts on the Wet Tropics World Heritage Area where the animals also resided. The proposed land fill is a classic case of a development which threatens unmanageable impacts upstream from a place of international significance. S085_2

It is essential that a rigorous approach is developed across the country to manage land use decisions in the catchment of our most precious places. The "development by development" approach is undermining our World Heritage estate broadly. This assessment should take

The Wilderness Society Sydney Inc, PO Box K249, Haymarket, 1240 Tel: (02) 9282 9553 Fax (02) 9282 9557 ABN: 78 768 573 156

August 10, 2010

seriously the cumulative impacts of this ad hoc approach and consider appropriate frameworks to be applied more broadly.

Furthermore, the barrier technology which is promised in this case to protect the World Heritage area cannot be deemed risk free. The precautionary principle needs to be applied when such risks are evident. S085_3

This proposed Armidale land fill is in the wrong place and undermines Australia's delivery of its World Heritage responsibilities. These responsibilities should not to be taken lightly as we have them in trust from all of humanity.

For more information please contact Felicity Wade, The Wilderness Society 02 9282 9553

Submission S085

Issue Number	Topic	Response
S085_1	LU1 H1	Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching downstream would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.
S085_2	W5	The EA outlines the management measures that will be implemented to avoid downstream impacts on the GRAWHA. The mitigation measures provided in the EA are considered sufficient to contain all dirty water runoff and leachate on site. The potential for the leaking of leachate from the landfill has been assessed in **Section 8.3** and **8.4** of the EA. Considering a worst-case scenario in the event leachate escaped the landfill, concentrations into the downstream water environment would be diluted to negligible levels.
S085_3	W4 P4	The landfill and pond design are based on recommended DECCW Landfill Guidelines Benchmark Techniques. The combination of composite landfill liner with a leachate collection system ensures maximum prevention of leachate leakage from the landfill into the surrounding environment. A review of available literature on the efficiency of different landfill linings was undertaken (refer **Appendix I** for detailed study). Although the Leachate Collection and Conveyance Systems have a finite life ranging from under 70 years to over 200 years, the system will have a higher operational life provided it is installed in accordance with the construction specifications including the CQA/CQC programmes and that the liner is protected from accidental tearing/piercing during construction. The LEMP that has been prepared for the site will dictate efficient operation and management of the landfill to ensure landfill structures are used appropriately and the risk of leachate leakage from the landfill site is minimised. Council would be required to monitor the site until leachate generation ceases and comply with other post-closure conditions as specified by the EPL and/or approval conditions. Council is committed to monitoring and rehabilitating the site and the proposed offset area post-closure for a time yet to be specified in any approvals. Consideration of the principles of ESD, including Intergenerational Equity and the Precautionary Principle is outlined in **Section 11.1** and **11.2** of the EA. The proposed landfill facility is part of Council's long term waste management strategy and has been planned to provide a service for the disposal of community waste for a period of 50 years or more. The landfill has been designed in accordance with the NSW EPAs Environmental Guidelines: Solid Waste Landfills and the detailed design will be aimed at achieving the most environmentally beneficial outcome for the effective treatment and disposal of waste so that the landfill operates effectively into the future and does not give rise to any long term environmental effects. Throughout the development of the proposed landfill facility, Council has aimed to balance the need for this development with the need to reduce potential environmental impacts which may result as a consequence of the development. The precautionary principle has been incorporated into the proposal through the commitment to mitigation measures to reduce the likelihood or consequence of the identified environmental impacts, hence minimising potential impacts from the proposed landfill facility.

These objections are presented by [redacted]Armidale NSW S086_1
The following are my objections to the proposed ADC landfill.It should not go ahead because all homes and their residents will be subjected to continual noise,continual stench,continual increase in
vermin population and continual unsightly flyaway rubbish.It is necessary for council to consider the human aspect of their proposal and how increased stress put upon people living in the vicinity
of the proposed dump will be afected health wise.The council is considering a plan to flare the S086_2
landfill gases- a process which creates highly toxic and carcinogenic gases - yes there are residents who would be affected by these - no wonder the council hasn't proposed the dump to be near to any of their residences - they're not completely stupid. I object to the fact that land values will decrease in the vicinity of the proposed dump. Environmentally any landfill placed in this S086_3
situation would be a disaster. The proposed site slopes towards the Gara River which flows into the
Oxley Wild Rivers National Park W orld Heritage Area.Eventually all toxins of the dump will S086_4
pollute
the waters of this river system- the council does not have the technology to stop leechate. Also S086_5
large stands of trees would be destroyed along with the habitats of a number of sensitive species of animals and birds - please prevent this destruction before it is too late!!! Shouldn't council be looking at alternate means of waste disposal. Isn't this a golden opportunity to raise the standards
of garbage disposal in Australia.We work at reducing our impact on the environment only to S086_6
have a
local council who wants to destroy a pristine part of the country - please help me in preventing this
destruction. Thankyou for taking the time to read ,consider and act on these objections.[redacted]
[redacted]

Submission S086

Issue Number	Topic	Response
S086_1	N3 AQ1 O2 V3	An assessment of noise impacts was undertaken and is summarised in **Section 8.7** of the EA. With the implementation of noise mitigation measures the proposed development would comply with the environmental criteria for the site under the neutral meteorological conditions that have been shown to be typical of the site, with minimal impacts to noise level amenity. Odour emissions from the site are predicted to be within acceptable levels at the nearest receiver and at the boundary of the site (**Section 8.5** and **Appendix O** of the EA. Standard management strategies for landfill sites would be employed including a sub surface gas and surface gas monitoring programme and the daily covering of waste. A complaints hotline would be set up in accordance with EPL requirements. Pest and vermin monitoring would be undertaken on a regular basis at the Project Site. Daily cover of the landfill would also discourage vermin and reduce odour emissions. Should the proposed techniques be unsuccessful in deterring pests and vermin, further investigations for additional measures would be undertaken such as engaging a firm of specialist exterminators if required. Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained.
S086_2	HR2 O1	Actively collecting landfill gasses with a landfill gas collection system and flaring the methane has been considered an option for the future of the landfill with regard to management of landfill gas. Other options include: • The application of a methane oxidation cap; and • Passive venting and using a filter (e.g. activated carbon or the like) to reduce emissions. The most suitable option would be implemented at the proposed landfill facility however this would not be known until the facility has been in operation and once accurate quantities of gas produced by the landfill have been determined. The proposed development would not pose a significant risk to human health during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither hazardous nor offensive discharges from the development site would occur. Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.
S086_3	SE5	The Project Site is located some 10 km from the town of Armidale, and maintains some screening from the north at the Waterfall Way where an area of dense vegetation abuts the road. The closest residential property is located approximately 400 m south of the Project Site. A report by Reichert *et al.* (1992) found whilst negative impacts on market value are historically experienced in major metropolitan areas, dependent on distance from a landfill, negative impacts on property value in predominantly rural areas are generally minimal to nonexistent. Significant effects on property/land values of the main township of Armidale are not expected. As the town of Armidale is located some 10 km from the Project Site, it is unlikely that there would be impacts to property/land values within the main township. With respect to rural properties

		generally located within 2 km of the Project Site (refer to **Figure 5** of the EA), it is also unlikely that property/land values would be significantly affected as the proposed landfill facility will be: • Well managed in accordance with the LEMP; • Screened and landscape provided around the entrance and boundaries to the Waterfall Way; and • Fully secured and locked when not in operation.
S086_4	W4	The mitigation measures provided in the EA are considered sufficient to prevent downstream impacts. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unlikely event leachate escapes the liner, diluted concentrations reaching downstream would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.
S086_5	FF5	An assessment of biodiversity including potential impacts of the proposed landfill facility on threatened species such as the Box-gum woodland and threatened birds was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The proposed works would involve clearing of less than 1 ha of Box gum woodland, 12.7 ha of the regrowth Stringybark woodland and approximately 3.3 ha of ground cover. The impacts will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset). Mitigation measures to minimise impacts of clearing on flora and fauna, including threatened species, will be documented in a suite of management plans including a VMP, Biodiversity Offset Management Plan (**Appendix H** of the EA), Vegetation Clearing Protocol and Native Fauna Management Plan. Further details of the contents of these plans are provided in Section 4 of the Flora and Fauna Assessment (**Appendix E** of the EA). These plans will be developed during detailed design of the landfill and prior to construction. The plans would be prepared in consultation with relevant government agencies (e.g. DECCW and DSEWPC) and in accordance with best practice guidelines and Recovery Plans for threatened species.
S086_6	P3	The proposed new landfill is part of a strategy for managing waste produced in the Armidale region in the long term. The proposed landfill forms a key component of Council's Waste Strategy (2010), which has the objective of providing *waste collection and disposal services to maximise reuse of materials and to minimise waste to landfill in order to:* • *Protect public health;* • *Conserve scarce natural resources;* • *Take better care of the environment.* As part of an integrated and strategic approach to waste management, Council have considered the implementation of various alternative waste treatment technologies. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate.

----- Forwarded message from [redacted] -----
Date: Fri, 13 Aug 2010 11:38:42 +1000
From [redacted]
Subject: Armidale Dumaresq Landfill Project
To: plan_comment@planning.nsw.gov.au

Objections from [redacted] Armidale NSW
Application no.06_0220 Waterfall Way is the main thoroughfare between the coast and Armidale.
It is advertised as a scenic drive passing through pristine country.However the ADC proposes a landfill along this road and I am greatly concerned that with a rubbish dump in view of the road,the S087_1
extra traffic using the road and the litter coming from rubbish trucks using the road, the nature of this road will deteriorate. It is a difficult road to travel mornings and afternoons due to the roads alignment and the direction of the sun's rays and the extra traffic will make it more dangerous. S087_2
S087_3 Tourism is a major industry in and around Armidale and the proposed dump on Waterfall Way would impact on this industry due to rubbish baring trucks travelling through Armidale as the ADC
proposes to have this as a regional landfill. Also there would be increased litter along Armidale's streets, increased odour along Waterfall Way and the popular picnic area ,the Blue Hole would S087_4 be
S087_5 spoiled by the proposed siting upstream from it. Everyone's rates will rise yet again to fund an impoverished council that has in the past spent money unwisely.This site was chosen in a very S087_6 unprofessional way as the land was owned by a councillor at the time.The proximity of the proposed dump to the Gara River and the World and National Heritage Oxley Wild Rivers National
Park will result in toxins escaping into the water as there is no know technology to prevent S087_7 leechate from reaching the waters of the Gara River and flowing downstream to Kempsey which relies on this water for the town's water supply.Council needs to investigate new technology S087_8 instead of continuing along the same old pathway and creating an environmental disaster. Please do not approve of this propsed landfill site as your decision against this proposal will be the only way of jolting the ADC out of complacency. Thank you for your time [redacted]
----- End forwarded message -----

Submission S087

Issue Number	Topic	Response
S087_1	V1	Visual montages of the various viewpoints were considered as part of the EA. All existing trees and known tree heights were included in the visual montages in addition to the final profile of the proposed landfill mass (refer **Figures 30** to **35** of the EA). It should be noted that these montages did not take into account future screening from the proposed biodiversity offset area. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that views towards the Project Site from Receivers 4 and 5 (and indicatively of the Waterfall Way) are considered to be reasonably significant, however these views would be partially masked by existing vegetation and further obscured by offset vegetation once matured. Trucks transporting waste would be required to be covered or fully enclosed in order to reduce fly away litter and odour. This will be included in the LEMP for the site.
S087_2	T3	The proposed landfill facility would utilise the Waterfall Way as an access route. It is noted that the Waterfall Way is an existing haulage route for several existing facilities in the region. Traffic modelling has been undertaken as part of the EA and has determined that Waterfall Way would continue operating at Level of Service A, assuming an increase in traffic movements from the proposed landfill facility of 6 movements per day (one way) of which only 4 would be heavy vehicles. Intersection upgrades have been proposed for the access to the site in order to increase safety and reduce impacts to the existing road network. Although the available sight distances and forecast traffic volumes do not currently warrant an upgrade to the existing intersection, an auxiliary (right turn) passing lane at the proposed intersection of the Project Site and Waterfall Way would be employed to enhance safety and improve traffic flow along Waterfall Way. This intersection upgrade considers the increase in traffic volume over the next 15 to 25 years.
S087_3	SE3	Waterfall Way is a National tourist drive, which is acknowledged in the EA. Views from Waterfall Way would be partially obscured by existing vegetation and further obscured by offset vegetation once matured. The traffic modelling determined that Waterfall Way would continue operating at Level of Service A, assuming an increase in traffic movements from the proposed landfill facility of 6 movements per day (one way). Given that the volume of waste to be directed to landfill is expected to decrease over time due to increasing recycling rates (refer to **Section 2.4**), traffic movements to the proposed landfill facility will remain stable or may decrease over time and thus potential impacts on traffic generation are considered acceptable. The EA concluded that the proposed landfill facility would not significantly affect or impede tourism in the area. Further, Armidale Dumaresq Council supports the promotion of tourism in the region through the Tourism Information Centre, provision of funding for local community infrastructure including public facilities for tourists and sponsorship of events to promote tourism in the region.
S087_4	V3 AQ1	Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained. Odour emissions from the site are predicted to be within acceptable levels at the nearest receiver and at the site boundary. Standard management strategies for landfill sites would be employed including sub surface and surface gas monitoring

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		devices and the daily covering of waste. A complaints hotline would be set up in accordance with EPL requirements.
S087_5	SE2	Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of downstream impacts to surface and groundwater. Impacts on the recreation values of the Blue Hole are unlikely. Water quality monitoring would be undertaken downstream of the proposed landfill (upstream of the Blue Hole).
S087_6	SE4	Council has the ability to raise funds by loans and any loan will be serviced by the waste management charge that is set by Council. Council has continually advised ratepayers that the proposed new landfill will be paid for by ratepayers by means of a landfill levy that was established in 2006 to fund the new landfill. This levy will be increased and decreased over the period of the staged loans that are required as landfill cells are developed and closed.
S087_7	W4	Management measures proposed for the landfill are designed to prevent dirty water runoff during construction and operation of the proposed landfill facility. Mitigation measures include a geosynthetic liner system, water management system and leachate barrier and collection system. These measures have been designed in accordance with the DECCW Landfill Guidelines Benchmark Techniques. With the implementation of environmental controls and mitigation measures to manage dirty stormwater runoff, leachate containment and emergency storage, the magnitude of impacts to surface water, including drinking water, would be negligible.
S087_8	P3	As part of an integrated and strategic approach to waste management, Council have considered the implementation of various alternative waste treatment technologies. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate.

2010 5:28 001. . .

[redacted]

5TH AUGUST 2010

APPLICATION No_06_0220.

NO WATERFALL WAY TIP!

WILL REDUCE LAND PRICES S088_1

CONTAMINATE HERITAGE AREAS S088_2

YOURS FAITHFULLY

[redacted]

Submission S088

Issue Number	Topic	Response
S088_1	SE5	The Project Site is located some 10 km from the town of Armidale, and maintains some screening from the north at the Waterfall Way where an area of dense vegetation abuts the road. The closest residential property is located approximately 400 m south of the Project Site. A report by Reichert et al. (1992) found 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/land values of the main township of Armidale are not expected. As the town of Armidale is located some 10 km from the Project Site, it is unlikely that there would be impacts to property/land values within the main township. With respect to rural properties generally located within 2 km of the Project Site (refer to **Figure 5** of the EA), it is also unlikely that property/land values would be significantly affected. It is unlikely that the proposed landfill facility would have significant effects on the property/land values of the adjacent properties as the proposed landfill facility will be: • Well managed in accordance with the EPL, LEMP and other plans of management; • Screened and landscape provided around the entrance and boundaries to the Waterfall Way; and • Fully secured and locked when not in operation.
S088_2	H1	The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). The Commonwealth determined that the proposal constitutes a controlled action under the EPBC Act, however proposed environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching downstream would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.

FRI, 06-AUG-10 9:09 [redacted] [redacted] P.01

[redacted]

Project : Proposed Armidale & Dumaresq Regional Landfill
06-0220

Major Development Assessment
Department of Planning
G.P.O Box 39.
Sydney N.S.W 2001

Dear Sir/madam,

This proposed landfill site is ludicrous!!?
Surely today there is a much more efficient & less costly solution to this problem?

S089_1

The pollution of the environment, health issues, habitat degradation, especially for the people living close by are some very real & important considerations.

S089_2

Our council has failed to be totally transparent & often councillors lack information

S089_3

I am deeply concerned

Yours sincerely

[redacted]

Submission S089

Issue Number	Topic	Response
S089_1	O1	The proposed development would not pose a significant risk to human health or the biophysical environment, either during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither hazardous nor offensive discharges from the development site would occur. Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.
S089_2	FF5	An assessment of biodiversity including potential impacts of the proposed landfill facility on flora, fauna and habitat was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The impacts will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset).
S089_3	E2 C1	**Section 7** of the EA describes the consultation that has been undertaken during the environmental assessment process to date. Consultation with the community was strategically planned and targeted to include landowners nearest the proposal, as well as residents along the transport route, specialist interest groups and the wider community. A range of media have been used during community consultation, including newsletters, website updates, media releases, public displays and direct contact with neighbouring landowners. Key issues raised by the public have been considered during the preparation of the EA and specialist studies to support the EA.

[redacted]
ARMIDALE. N.S.W. 2350
July 31, 2010.

Proposed Armidale Dumaresq Regional Landfill 06-0220.
Regarding this proposal on land owned by a Councillor and real estate agent when the site was selected, I wish to state my objections. I have strong objections to the site because it has been located based on old and questionable data and designed using discredited technology. The site is next to the Gara River next to the Waterfall Way, upstream from the World –Heritage listed Oxley Wild Rivers National Park. I urge you to reject the Council's plan as I fear that toxins will gradually escape into the groundwater, then into the river system, and that weeds and garden escapes will be likely to enter the World Heritage and National Heritage areas as they escape from the landfill.
The dump would be visible from the Waterfall Way, one of the top three drives in Australia and a major contributor to tourism and eco-tourism in the Armidale and New England Region.
I am also concerned about possible health issues.
We need a site that does not drain into the Gondwana Rainforests of Australia World heritage Water Catchment. I feel sure a more suitable site could be found and make an earnest appeal to you to reject the Council's plan

S090_1
S090_2
S090_3
S090_4
S090_5
S090_6

[redacted]

[redacted]

Department of Planning
Received
12 AUG 2010
Scanning Room

Submission S090

Issue Number	Topic	Response
S090_1	P4	The landfill and pond design are based on recommended DECCW Landfill Guidelines Benchmark Techniques. The combination of composite landfill liner with a leachate collection system ensures maximum prevention of leachate leakage from the landfill into the surrounding environment. A review of available literature on the efficiency of different landfill linings was undertaken (refer **Appendix I** for detailed study). Although the Leachate Collection and Conveyance Systems have a finite life ranging from under 70 years to over 200 years, the system will have a higher operational life provided it is installed in accordance with the construction specifications including the CQA/CQC programmes and that the liner is protected from accidental tearing/piercing during construction. The LEMP prepared for the site dictates efficient operation and management of the landfill to ensure landfill structures are used appropriately and the risk of leachate leakage from the landfill site is minimised.
S090_2	W4	Community concerns have been noted regarding potential for pollution of the Gara River and downstream waterways, through surface water runoff and leachate migration from the landfill. These issues are addressed in **Sections 8.3** and **8.4** of the EA. A range of environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater.
S090_3	FF4	The potential impacts from weeds are addressed in **Section 8.8** of the EA. The preparation and implementation of a WMP would aim to minimise the spread of weeds within the proposed landfill site and to adjacent areas of native vegetation. The plan would provide actions to control existing weed infestations on the site prior to construction, utilise a wheel wash facility for all vehicles entering or leaving the site to prevent transport of weeds, and provide targeted monitoring and control of invasive species that are harmful to threatened species and EEC or other potential habitat for fauna species. Measures would also be identified in the VMP which would outline ongoing monitoring and follow-up controls of weeds that establish on disturbed areas, with particular attention to the eradication of noxious weeds.
S090_4	V1 SE3	Visual montages of the various viewpoints were considered as part of the EA. All existing trees and known tree heights were included in the visual montages in addition to the final profile of the proposed landfill mass (refer **Figures 30** to **35** of the EA). It should be noted that these montages did not take into account future screening from the proposed biodiversity offset area. It is also noted that views towards the Project Site from Receivers 4 and 5 (and indicatively of the Waterfall Way) are considered to be reasonably significant, however these views would be partially masked by existing vegetation and further obscured by offset vegetation once matured. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that the Waterfall Way is an existing haulage route for several existing facilities in the region and tourism in Armidale has continued to grow. It is not expected that there would be detrimental impacts to tourism and eco-tourism in the Armidale and New England Region as a result of trucks utilising the Waterfall Way as an access route.
S090_5	O1	The proposed development would not pose a significant risk to human health or the biophysical environment, either during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither

		hazardous nor offensive discharges from the development site would occur. Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.
S090_6	P3	Over 50 alternative sites were considered for the proposed landfill facility as part of the site selection process, including sites within several of the surrounding LGA's. Site evaluation included consideration of environmental impacts, proximity to sensitive receivers and their likely magnitude at each site. The final siting study was appended to the EA (refer **Appendix C** of the EA) and concluded that the current site was the most suitable with respect to the identified criteria.

PCU013610

SUBMISSION

Department of Planning
Received
17 AUG 2010
Scanning Room

Project Name Proposed Armidale Regional Landfill

Project Ref. 06_0220

Submitted by [redacted]
Armidale
NSW 2350

Postal Address [redacted]
Armidale
NSW 2350

Project Name Proposed Armidale Regional Landfill

Project Ref. 06_0220

Submission by [redacted]
Armidale NSW 2350

Postal Address [redacted]
Armidale NSW 2350

ADC New Land Fill Site - Waste Management

Fact The process of finding a suitable New Landfill site has been 'ongoing' for far too long – 'A site selection process was undertaken since the mid 1990s which identified a total of over 50 sites for investigation' EA 4.2.1 page 43. S091_1

Fact Of the many sites investigated the one 'favored' by council is part owned by an ex-councilor and a prominent realestate entity

Fact The Contracted Estimate Cost at the commencement of the project was $604,239

Fact Council's estimated contract cost to end Sept 2009 is currently $1,600,516 AECOM still have to invoice Council for actual work done Oct 2009 to date. (Project Management tender price $19,572 – current $158,351!) S091_2

Fact At the only public meeting held in Armidale Town Hall (29th January 2003) to debate the Waterfall Way site, a vote was taken. The audience of over 150 voted unanimously to reject to proposed site. The Chairman agreed that he would advise Council of the decision. S091_3

Fact At the subsequent Council meeting, councilors ignored the electorate and voted unanimously to continue with the development of the Waterfall Way site.

Fact Council also voted to subsidise the development with a levy on all ratepayers. S091_4

Fact Prior to the last Council elections candidates were invited to a public meeting where they were required to identify their 'position' re. the new Landfill site.

Fact Of the candidates to argue against the new landfill site on Waterfall Way, two of those who were elected were nominated for the Waste Committee. S091_5

Fact Both of the above were party to a unanimous vote by Council to continue with the Waterfall Way site

Fact Both of the above were challenged at the first meeting of the Waste committee. Neither showed any remorse for their anti-democratic actions. S091_5

Fact At the Waste Committee meeting of 9 June 2010 the question was raised as to why there appeared to be no funds budgeted for the purchase and development of new land fill. S091_6

The response was incredible, but like most 'awkward' questions raised in committee, they usually don't appear in the minutes.

Conclusion

15 years to develop a plan which is 500% over the cost budget already.

The site is environmentally sensitive

The site has been unanimously rejected by the electorate

The site has not been purchased even though over $1.6 million has been spent on site analysis.

The allocation of funds ($500,000) in the budget many years ago (2003) has evaporated. There appear to be no funds allocated for this project in the current 5year Management Plan S091_6

The funds generated from the waste levy added to the rates appears to have vanished.

'Mr. Brazier Hollins asked why there was no financial allocation for the new landfill in the next year's Management Plan. Mr. Stellar advised that exact timeframes for progressing the project are not possible to predict at present but that Finances will be obtained from loans and from duly endorsed by Council as necessary' (ADC Waste Management Committee Minutes – June 2010)

The litany of failure identifies the lack of expertise, at council level, to manage a project of this nature. The council have employed 'consultants' throughout the process. This suggests that the use of the consultants has been totally inefficient. S091_7

The last cost budget prepared for this landfill identified a figure of $15 million – it was $5 million in early 2000. If the current estimate is as accurate as the original, the landfill could easily cost a conservative $50million S091_8

The above surely suggest that on both moral and practical grounds the project should be totally reassessed, by professionals.

(I am a member of the ADC Waste Management Committee)

[redacted]

Submission S091

Issue Number	Topic	Response
S091_1		The Project Site is proposed to incorporate portions of the Sherraloy and Edington properties (refer to **Figure 4** of the EA), which would be subdivided. Appropriate portions, totalling 86 hectares, would be formally acquired by Council to facilitate the proposed landfill facility. The Edington property is currently owned by a former Councillor. The Sherraloy property is currently owned by one of the real estate agents engaged by Council to identify suitable land for sale. The Local Government Act outlines the legal requirements for the conduct of Councillors with respect to pecuniary interest and Councillor Waters scrupulously observed his obligations in this regard, keeping himself at arms length from all discussions and Council decisions, declaring his interest and vacating Council chambers when necessary. Mr Crisp represented both landowners in all other dealings. Mr Crisp was involved in his capacity as a real estate agent in assisting Council with identification of suitable land along with a number of other real estate agents in Armidale.
S091_2		Council cannot provide comment on the exact costs for the services being provided by AECOM due to the commercially sensitive nature of the information. It is noted however that AECOM was contracted by Council through the normal tendering requirements of the Local Government Act and its regulations, to provide Council with project management services on a fee for services basis to establish a landfill on the selected site. This includes obtaining planning approval, design, environmental assessment and project management of the construction contract.
S091_3		As is common in public meetings of this nature and the apathy of the public in general, the vast majority of those attending were opposed to the proposed selection of site 9 as the preferred site. Site 7 was not selected as the preferred site until after that public meeting and the review undertaken by AECOM (formerly Maunsell) of the selection process to date and the re-assessment of the short-listed sites.
S091_4		Council has continually advised ratepayers that the proposed new landfill will be paid for by ratepayers by means of a landfill levy that was established in 2006 to fund the new landfill. This levy will be increased and decreased over the period of the staged loans that are required as landfill cells are developed and closed.
S091_5		This demonstrates the democratic process in practice. Some Councillor(s) and members of the Waste Management Committee do not support the selected site. Pressure was being applied prior to the 2008 election for Councillors to commit to not build the landfill. The Mayor wrote to all candidates not to make a commitment in the absence of all the facts; i.e. the environmental assessment studies being completed. Council considered this good governance.
S091_6		David Steller, Director of Engineering replied to Mr Brazier-Hollins's enquiry at the meeting and this is recorded in the Minutes as follows: *"Mr Brazier-Hollins also asked why there was no financial allocation for the new landfill in next year's Management Plan. Mr Steller advised that exact timeframes for progressing the project are not possible to predict at present but that finances will be obtained from loans and from duly endorsed by Council as necessary."* Accumulated funds raised for specific purposes are held as ring-fenced allocations in Council's reserves in accordance with the requirements of the Local Government Act. Funds raised for specific purposes can only be expended on that purpose.
S091_7		In 2004, Council sought tenders from suitably qualified consultants to provide project management and consultancy services to manage the design, planning, environmental assessment, land acquisition and construction project management for the new regional landfill. AECOM was engaged by Council through this competitive tender process. AECOM has extensive experience in the design, planning and management of large and small landfills, and therefore has a well developed understanding of the impacts of landfill construction and operation on the environment. More importantly, AECOM has an in-depth, practical and applicable understanding of management and mitigation measures required to minimise the impacts of landfill developments on the environment. Throughout the commission to date, AECOM has provided relevant technical and environmental information to Council as required as part of the original requirements of the agreed contract. In addition, AECOM has also undertaken additional work as variations to the agreed contract, as requested by Council . The additional work has been undertaken to provide a more robust design and assessment for the proposed landfill project.
S091_8		The estimated cost for the construction of the landfill is $14 million for the first two cells (which includes water and leachate collection and management systems, access road, amenities) and $10 million for the remaining three cells, a total of $24 million over the life of the landfill. The annual operational cost is likely to be in the order of $1 million per year.

Armidale Regional Landfill
Environmental Assessment - Submissions Report
AECOM

My name is [redacted] I would like to formally object to the proposed Landfill plan for the Gara Valley via Armidale. The project name is Armidale Dumaresq Regional Landfill, 06_0220 My reasons for objection are that not enough planning has been carried out by Council in regard to the Herritage of the area run off of sediment into the Gara river. Toxins will escape into the groudwater then to the river system. The Gara river flows into the Gondwana Rainforests of Australia World Heritage Area. The site is also on land owned by a former Councillor & a real estate agent who was involved in site selection! Surley there is another site more suitable than this one. From [redacted]

S092_1
S092_2
S092_3
S092_4

Submission S092

Issue Number	Topic	Response
S092_1	H1	The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). The Commonwealth determined that the proposal constitutes a controlled action under the EPBC Act, however proposed environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching downstream would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.
S092_2	W1	Specialist studies indicate that the risk of contamination of the Gara River is very low. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. Further, the Water and Leachate Management Plan details all aspects of the design and operation of the Leachate Pond, Sedimentation Basin and Dry Basin which will ensure the proposed landfill has negligible impacts on downstream sedimentation and water quality.
S092_3	W4	The landfill and pond design are based on recommended DECCW Landfill Guidelines Benchmark Techniques. The combination of composite landfill liner with a leachate collection system ensures maximum prevention of leachate leakage from the landfill into the surrounding environment. The LEMP prepared for the site (**Appendix B** of the EA) dictates efficient operation and management of the landfill to ensure landfill structures such as the leachate pond, sediment basin and dry basin are maintained appropriately and the risk of leachate leakage from the landfill site is minimised. Council would be required to monitor the site until leachate generation ceases and comply with other post-closure conditions as specified by the EPL and/or approval conditions. Council is committed to monitoring and rehabilitating the site and the proposed offset area post-closure for a time yet to be specified in any approvals.
S092_4	P3	Over 50 alternative sites were considered for the proposed landfill facility as part of the site selection process, including sites within several of the surrounding LGA's. Site evaluation included consideration of environmental impacts, proximity to sensitive receivers and their likely magnitude at each site. The final siting study was appended to the EA (refer **Appendix C** of the EA) and concluded that the current site was the most suitable with respect to the identified criteria.

public submission to
Armidale-Dumaresq Waste Facility
Armidale Landfill Project - Exhibition
project application number: MP06_0220

[originally sent pdf via Dpt Planning web site, about 10 pm 5-8-2010]

5 August 2010

[redacted]

I object to the project.

Despite Council's commitment to investigate alternatives to landfill, those technologies listed are from a Council discussion paper dated 2002. This project is designed without due consideration of a number of proven, commercially available, municipal waste sorting technologies and integrated systems. S093_1

The volume, content, leachate and gas production of the landfill material would be considerably different if sorted by a Dirty Materials Recovery Facility (MRF) or Wet Dirty MRF, than if left unsorted; this calls into question all designs in this project that depend on estimates and composition of the material going to landfill. There is a considerable possibility of overcapitalisation of the landfill project. S093_2

With the ability of contemporary MRFs to divert more than 60% of material from landfill (potentially more than 90% with plasma arc gasification); and the ability of these systems to divert recyclables, capture more or all methane, reduce or eliminate leachate, and be net producers of power, water, and compost; any final plans for further landfill in Armidale Dumaresq should not proceed until a proper consideration of potential MRFs is carried out. Indeed, given the potential for mining the resources contained in current landfills; the selection, design and construction of an upgraded MRF should be a priority. S093_1

Being on rail line gives potential access to the waste streams and contents of existing landfill from Tamworth etc, and other councils on and around the Moree rail line.

===

"It should be noted, however, that Council's kerbside collected, domestic waste stream (i.e. the content of its 140 litre, red-lidded 'wheelie' bins) is not currently able to be sorted. This material currently is directed straight to landfill."
Vol 1 main report, 60011672_ArmidaleEA_For Exhibition April 2010, p. 27

• Which means we continue to bury valuable resources, and toxic materials and produce greenhouse gas and leachate which we must then manage, at some expense.

"In the future Council also intends to further process (i.e. treat) all putrescible wastes at the Waste Management Centre. This is intended to be within a proposed AWT facility, however it should be noted that any possible future establishment of an AWT facility at Waste Management Centre does not form part of this proposal. If established, it is intended that an AWT facility would employ appropriate waste treatment technology to render all putrescible wastes received into either a saleable "compost" type product or a residual waste material that would no longer be considered as "putrescible". The residual, non-putrescible waste would then be landfilled at the proposed landfill facility, in accordance with DECCW's "General solid waste (non-putrescible)" criteria."
ibid, p. 30

• Establishment of an AWT facility at Waste Management Centre **should precede this landfill proposal**. Non putrescible waste landfill calls for different design than putrescible waste landfill. S093_1

"Council remains committed to minimising the total amount of waste directed to landfill. Further investigations into alternatives to landfilling were more recently carried out, however it is believed that notwithstanding new technologies and a commitment to recycling and reuse, there would always be residual waste that would require final disposal as landfill."
ibid, p. 37

• It is true that for the foreseeable future there will be some need for landfill; however, the amount of that landfill required could be greatly reduced. The composition and capacity of the material going to landfill to produce leachate and gases, and the composition of the leachate and gases would be very different for the process as presented in the EIS compared to that produced by a facility utilising appropriate MRF.

"Table 10: Review of Alternatives to Landfill, 2002
Bedminster Digester: composting drum
WTT B.V Holland: composting cells
Eco Waste Pty Ltd in association with Brandown Pty Ltd: composting
VCU Technology Pty Ltd: vertical composting unit"
(council discussion paper 2002)

• little apparent automated sorting of the waste stream

"4.1.3 Additional Studies into Alternative Waste Technology
As noted previously, Council is committed to reducing waste to landfill through the application of Alternative Waste Technology (AWT). AWT refers to technologies such as Mechanical Biological Technologies (MBT), thermal treatment or a combination of both MBT and thermal treatment. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. **Council requires that during its investigation and preliminary design processes for the proposed landfill facility, all practical options for additional waste processing and separation facilities that may be available in the marketplace are identified and their feasibility assessed for incorporation at the Armidale Waste Management Centre.**"
ibid, p. 42

"9.2.1
...
Continue efforts to ensure wastes are managed throughout the Armidale Dumaresq LGA in accordance with the waste management hierarchy and the principles of the WARR Act, where **disposal of wastes to landfill are considered to be the final waste management option.**

Progressively ensure that new technologies are implemented in relation to resource recovery and environmental management of the proposed landfill throughout its life (including both operational and rehabilitation phases)."
ibid, p. 267

• My contention is that Council, despite repeated commitments to continue investigations into landfill alternatives; has failed to identify and implement suitable technologies. S093_1

for consideration

WSN Macarthur Resource Recovery Park, Jack Gully, NSW

ArrowBio http://www.arrowbio.com/
WSN_MRRP_fact+sheet.pdf
http://www.wasteservice.nsw.gov.au/dir138/wsn.nsf/Content/Education%20and%20Safety_Facts%20and%20Figures%20The%20Macarthur%20Recovery%20Park
http://www.wasteservice.nsw.gov.au/dir138/wsn.nsf/Content/Education+and+Safety_Alternate+Waste+Technology
Ecolibrium™ Mixed Waste facility
http://wasteservice.nsw.gov.au/dir138/wsn.nsf/Content/Facilities_Jacks+Gully+Facility

Liverpool City Council

http://www.sita.com.au/our-services/post-collections/sawt—sita-advanced-waste-treatment.aspx

• Dirty Materials Recovery Facilities: sourcing from general waste stream
• Wet Dirty Materials Recovery Facilities: sourcing from general waste stream, using water to assist in separation and cleaning
• optical sorting: since 1990s, can now sort & separate different coloured glass & different plastics
http://www.eaglevizion.com/
TiTech Visionsort of Norway http://www.titech.com/
• plasma arc waste disposal
http://en.wikipedia.org/wiki/Plasma_arc_waste_disposal
• direct smelting
• fluid bed combustion
• advanced oxygen enrichment
• Ebara fluidization process
• gasification

http://en.wikipedia.org/wiki/Waste-to-energy#Global_WTE_developments

International Solid Waste Association http://www.iswa.org/

other commercial systems

Machinex http://www.machinex.ca/
Redox, Netherlands http://www.redox.nl/
Sherbrooke O.E.M. Canada http://www.sherbrooke-oem.com/

plasma

Plasco, plasma torch, lower temperature than other methods allowing refractory brick containment
http://www.plascoenergygroup.com/?Technology_Overview
claiming:
99.8 diversion from landfill
- 2.1 tonnes of greenhouse gas reductions from each tonne of waste processed
- No emissions from converting waste to PlascoSyngas and other valuable products
- Ultra-low emissions from generating power
- Net 1.2 MWh of green base load power from each tonne of waste converted
- No water consumption
- Electricity generated within the local grid

http://www.plascoenergygroup.com/?Environmental_Performance

note click on tabs:
Greenhouse gas reductions
emissions performance
99.8% diversion
distributed clean power
99.8% Diversion of Waste and Safe Removal of Heavy Metals from Waste Streams
pilot plant currently operating:
http://www.zerowasteottawa.com/en/
http://www.ottawa.ca/residents/environment/city_hall/getgreen/ecosystem/air/plasma_waste_conversion_en.html

Biochar

Alternative product instead of compost. Best Energies biochar plant, commercial designs ready to go, figures already available and research test bed available now to produce reliable figures based on different feedstocks. Also utilize greenwaste, manures etc. Plant produces syngas & biochar, both with commercial value.

Could also utilise greenwaste stream, manures and other agricultural by-products.

Australian and New Zealand Biochar Researchers Network http://www.anzbiochar.org/
International Biochar Initiative http://www.biochar-international.org/

Submission S093

Issue Number	Topic	Response
S093_1	P3	Resource recovery facilities, including the Materials Recycling Facility (MRF) and Resource Recovery Centre at the existing Armidale Waste Management Centre will be maintained and improved over the long term and throughout the period of operation of the proposed new landfill. As part of the integrated waste management strategy, Council have considered the implementation of various alternative waste treatment (AWT) technologies. AWT refers to technologies such as Mechanical Biological Technologies (MBT), thermal treatment or a combination of both MBT and thermal treatment. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate. A review of the costs of AWT technologies would be undertaken should the trial be successful and more accurate costing information is available based on its trial and adoption at the existing facility.
S093_2	P4	The Armidale Waste Management Centre would continue to separate all clean, recyclable material such as glass, plastic bottles and e-waste, from other non-recyclable wastes to be directed to landfill. All green waste would continue to be composted at the existing Armidale Waste Management Centre and made available for reuse. Notwithstanding the current high recycling rates and potential future increases in recycling rates, it is estimated that approximately 15,000 tonnes per annum of non-recoverable waste would be required to be directed to landfill. Therefore the proposed landfill has used this tonnage as the basis for the concept design and size of the landfill.

ElectorateOffice NorthernTablelands - Proposed Landfill Site

From: [redacted]
To: <northerntablelands@parliament.nsw.gov.au>
Date: 6/08/2010 4:21 PM
Subject: Proposed Landfill Site

Dear Mr Torbay,
I'm writing to voice my opposition to the development of a landfill site off the Waterfall Way east of Armidale. Over the years I've visited and enjoyed several areas in the Oxley WRNP and the picnic area of Blue Holes. The whole area,as you know, is a precious natural wonder that must not be compromised by the decisions of short sited and insensitive politicians. To consider an area up stream of the NP is beyond belief and as well it will be an ugly eyesore from the Waterfall Way. S094_1
There must be either a more suitable site and other ways of, at least some, garbage disposal short of landfill, such as incineration which would take pressure of another site elsewhere. S094_2
As Albert Schweitzer said: 'We have forgotten how to foresee and to forestall, and will end by destroying the earth'
What this landfill proposal represents is a small but initial step towards the degradation of the NP and environs. Once 'the foot is in the door' there will be no end to further vandalisation.

Yours sincerely [redacted]

Submission S094

Issue Number	Topic	Response
S094_1	V1	Visual montages of the various viewpoints were considered as part of the EA. All existing trees and known tree heights were included in the visual montages in addition to the final profile of the proposed landfill mass (refer **Figures 30** to **35** of the EA). It should be noted that these montages did not take into account future screening from the proposed biodiversity offset area. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that views towards the Project Site from Receivers 4 and 5 (and indicatively of the Waterfall Way) are considered to be reasonably significant, however these views would be partially masked by existing vegetation and further obscured by offset vegetation once matured.
S094_2	P3	As part of the site selection process, over 50 alternative sites were evaluated for the proposed landfill facility. The *Regional Landfill Siting Study Final Report* (Maunsell, 2004) was appended to the EA (refer **Appendix C** of the EA). Incineration is a controversial method of waste disposal in Australia due to issues such as micropollutants in the gaseous emissions from incinerator stacks. In addition, due to the need to dispose of large amounts of toxic waste ash every year, incineration does not eliminate the need for landfill. Incineration involves large capital costs, and many incinerators encounter unexpected maintenance costs, explosions and unanticipated down-time. The modern approach to waste disposal in Australia generally involves the use of AWT technologies to reduce the volume of waste to landfill. Council have considered the implementation of various AWT technologies and has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate.

Good Afternoon,
My name [redacted] strongly oppose the location for the proposed landfill by the Armidale Dumaresq Council outlined as "Proposed Armidale Dumaresq Regional Landfill, 06_0220"
I believe that the problems outlined below summarise the lack of planning and provision by the council to suitably safeguard the surrounding area. I also protest the location of the landfill because of the impact on tourists as they travel on the Grafton Rd.

Habitat Degradation

- If the landfill is built on the proposed site adjacent to the Gara River, it will require substantial clearing of habitat which in turn will further harm already threatened wildlife and degrade a critically endangered bush environment. S095_1
- Examples include: koalas, rare birds such as the Diamond Firetail and Speckled Warbler, and critically-endangered Box Gum woodland.

Health Issues

- The dump will emit greenhouse gasses and other toxic chemicals.
- Landfill gas from breakdown of rubbish is about 40-60% methane and the rest carbon dioxide. S095_2
- Council is considering flaring the landfill gas. However, when combusted, this gas contains highly toxic and carcinogenic compounds, such as dioxin and mercury.
- Dumps produce offensive noise, odour, litter, dust, insects and vermin which will be coupled with a modified and scarred landscape. S095_3

Tourism Impacts

- The dump will be visible from the Waterfall Way, one of the top three drives in Australia and a major contributor to tourism in Armidale and the New England region. S095_4
- The Waterfall Way provides the gateway to a host of eco-tourism activities. Only a short distance along the Waterfall Way lie the Bakers Creek, Wollomombi and Ebor Waterfalls plus the National Parks which make up the World Heritage listed "Gondwana Rainforests of Australia".

3km downstream from the proposed landfill site is the "Blue Hole", swimming and recreation area. Undoubtedly pollution contaminations in the form of litter or leachate chemicals have the potential to permanently affect this recreation area S095_5

Thankyou

[redacted]

Submission S095

Issue Number	Topic	Response
S095_1	FF2 FF5	An assessment of biodiversity including potential impacts of the proposed landfill facility on threatened species such as the Box-gum woodland and threatened birds was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The impacts will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset). Impacts to threatened species such as the Box-gum woodland and threatened birds, will also be managed through implementation of a suite of management plans including a VMP, Biodiversity Offset Management Plan (**Appendix H** of the EA), Vegetation Clearing Protocol and Native Fauna Management Plan. Further details of the contents of these plans are provided in **Section 4** of the Flora and Fauna Assessment (**Appendix E** of the EA). These plans will be developed during detailed design of the landfill and prior to construction. The plans would be prepared in consultation with relevant government agencies (e.g. DECCW and DSEWPC) and in accordance with best practice guidelines and Recovery Plans for threatened species.
S095_2	HR2 AQ4	GHG emission sources for the proposed landfill include emissions resulting from fuel use on site, vegetation clearance, landfill gas emissions and use of electricity. A greenhouse GHG has been undertaken as part of the EA (refer **Section 8.6** of the EA) and in accordance with EPA Landfill Guidelines Benchmark Technique Number 11 – Extraction and Disposal of Landfill Gas. The assessment considered construction and operational GHG emissions. Landfill methane emissions were considered as part of the GHG assessment. Suitable options to manage landfill gas have been presented, including: • Methane oxidation cap; • Passive venting and using a filter (e.g. activated carbon or the like) to reduce emissions; and • Landfill gas collection system and flaring of methane (combustion conversion to CO2). The most suitable option would be determined and implemented at the proposed landfill facility once data confirming landfill gas quantities is collected from the operational landfill. Substances such as mercury and dioxin compounds are not expected to be produced within the landfill due to the type of waste received – no hazardous or chemical waste would be received. As such, the release of these compounds in the local surface water system would not occur. The proposed development would not pose a significant risk to human health during construction or operation. This is due to the implementation of comprehensive measures that will ensure that neither hazardous nor offensive discharges from the development site would occur. Council is committed to ensuring the proposed landfill facility is operated so that any emissions are in accordance with environmental health regulations and guidelines stipulated within relevant local, State and Federal Government policies and legislation.
S095_3	N3	An assessment of noise impacts was undertaken and is summarised in **Section**

	AQ1 V3 O2 V2	**8.7** of the EA. With the implementation of noise mitigation measures, the proposed development would comply with the environmental criteria for the site under the neutral meteorological conditions that have been shown to be typical of the site, with minimal impacts to noise level amenity. Odour emissions from the site are predicted to be within acceptable levels at the nearest receiver and at the boundary of the site (**Section 8.5** and **Appendix O** of the EA. Standard management strategies for landfill sites would be employed including sub surface and surface gas monitoring and the daily covering of waste. A complaints hotline would be set up in accordance with EPL requirements. Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained. Total dust emissions due to the operations at the proposed landfill facility have been estimated by analysing the excavation and landfilling operations for three stages of the proposed landfill. Predictions of dust generation were very low and it was concluded that the proposed activities would be unlikely to cause exceedances of the DECCW air quality criteria. Overall, dust concentrations and deposition levels at all residential receivers were very low and it was concluded that air quality impacts arising from dust emissions from the proposed landfill facility would be negligible. Pest and vermin monitoring would be undertaken on a regular basis at the Project Site. Daily cover of the landfill would also discourage vermin and reduce odour emissions. Should the proposed techniques be unsuccessful in deterring pests and vermin, further investigations for additional measures would be undertaken such as engaging a firm of specialist exterminators if required.
S095_4	SE3 V1	The proposed landfill facility would utilise the Waterfall Way as an access route. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that the Waterfall Way is an existing haulage route for several existing facilities in the region. It is considered views from Waterfall Way would be partially masked by existing vegetation and further obscured by offset vegetation once matured. It is not expected the proposed landfill facility would significantly affect or impede tourism in the area. Armidale Dumaresq Council supports the promotion of tourism in the region through the Tourism Information Centre, provision of funding for local community infrastructure including public facilities for tourists and sponsorship of events to promote tourism in the region.
S095_5	SE2 W4	Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. Impacts on the recreation values of the Blue Hole are unlikely. Water quality monitoring would be undertaken downstream of the proposed landfill (upstream of the Blue Hole).

[redacted]

I am a near resident to the site of the proposed landfill and I am objecting to this proposal for the
following reasons:

1)proximity to the Gara River. The proposed site is within several hundred metres of this waterway and is to be located in a small valley which is subject to substantial periodic flooding. S096_1
Although Council has made assurances as to the "safety" of the proposed structures being placed to minimise spillage of contaminated materials into the river system, I am not convinced of this, having witnessed on many occasions the volume of water flowing through this valley. I am also aware of the very real prospect that leachate will inevitably escape from this development and enter the river system.
2)proximity to the World Heritage Oxley Wild Rivers National Park. This National Park and the environment it protects should be treated with the respect that such an iconic location demands S096_2
and requires. Already the EPBC has ruled that this proposed landfill "will, or is likely to, have a significant impact upon World Heritage values " in this National Park.
Obviously the location has not been well planned and the project requires rejection on grounds 1)
and 2) alone.
3)Council is not looking forward with this plan.Council should be looking at a reduced landfill rather S096_3
than this large "regional" construct. A forward-thinking Council would be planning for a minimum
landfill solution to minimise costs to ratepayers.
4)habitat degradation. The proposed site is to require substantial clearing of habitat which in turn S096_4
will further harm already threatened wildlife and degrade a critically endangered bush environment. This area is inhabited by koala and the rare Diamond Firetail and Specled Warbler bird species. The Gara River is also home to platypus breeding areas within close proximity to this
proposed landfill development.
5)impacts of a social and tourism nature. Dumps are well known to produce offensive and highly toxic gases as well as litter, dust, insects, vermin, noise and odour. As a resident within 1 km of this proposed development there will be direct impacts on an already established lifestyle of S096_5
myself and my neighbours.
The Waterfall Way provides the gateway to a host of eco-tourism activities and this road has been
given high status for its scenic beauty, having been listed as one of the top three driving experiences by the NRMA. It is a major contributor to the tourism opportunity of Armidale and the S096_6
New England Region.

I am pleased to have the opportunity to submit my objections to this proposed development and trust that they will be given due consideration in the evaluation of such.

Submission S096

Issue Number	Topic	Response
S096_1	W3 W1	The proposed landfill site is located within the upper reaches of the catchment (approx 275 hectares in area). Surface runoff from the site drains to the north towards an ephemeral creek, which flows east and ultimately discharges into the Gara River approximately 1km downstream of the site. The flood assessment undertaken for the project was in accordance with the procedures outlined in the ARR guidelines which are used for the analysis and prediction of flood events in Australia for design purposes. ARR was used to predict the 1 in 100 year ARI storm event from the existing creek catchment. Flooding will occur along the existing ephemeral creek during high rainfall events. The extent of the flooding will encroach the north-eastern boundary of the site (adjacent to the line of the creek) as per existing (natural) conditions however the leachate pond, sedimentation pond, dry basin and the landfill itself are all located outside the extent of the predicted 1in 100 year floodplain. The water management system of the landfill site has been designed to contain the 24 hour duration, 1 in 100 year ARI surface runoff volume from the entire disturbed catchment area of the site in accordance with the ARR guidelines. This is considered to provide adequate protection against heavy rainfall and ensure containment of onsite dirty and leachate water. The proposed dry basin incorporates adequate freeboard storage to contain the 24 hour duration, 1 in 100 year ARI surface runoff volume (which equates to 153 mm rainfall or approximately 19 ML storage) from the entire disturbed catchment area of the site, without further containment or storage actions needing to be implemented.
S096_2	H1	Potential impacts on biodiversity were summarised in **Section 8.8** and **8.12** of the EA. The full assessment is provided in the Flora and Fauna Assessment (**Appendix E** of the EA). Potential impacts on water quality in the OWRNP were assessed in the Hydrogeological (Leachate) Assessment (**Appendix I** of the EA) and the heritage values of the GRAWHA (including the OWRNP) have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). DSEWPC determined that the proposal constitutes a controlled action under the EPBC Act. The nature of the assessment process is such that proposals are assessed assuming no mitigation is in place. However, mitigation measures proposed in the EA, including stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage, would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching downstream would not pollute the existing environment or have impacts on aquatic ecology of the OWRNP or have a significant impact on the World Heritage Area.
S096_3	P3	Resource recovery facilities, including the MRF and Resource Recovery Centre at the existing Armidale Waste Management Centre will be maintained and improved over the long term and throughout the period of operation of the proposed new landfill. The Armidale Waste Management Centre would continue to separate all clean, recyclable material such as glass, plastic bottles and e-waste, from other non-recyclable wastes to be directed to landfill. All green waste would continue to be composted at the existing Armidale Waste Management Centre and made available for reuse. As part of the integrated waste management strategy, Council has considered the implementation of various AWT technologies. AWT refers to technologies such as MBT, thermal treatment or a combination of both MBT and thermal treatment.

		Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate. Notwithstanding the current high recycling rates and potential future increases in recycling rates, it is estimated that approximately 15,000 tonnes per annum of non-recoverable waste would be required to be directed to landfill. Therefore the proposed landfill has used this tonnage as the basis for the concept design and size of the landfill.
S096_4	FF5 FF2	An assessment of biodiversity including potential impacts of the proposed landfill facility on threatened species such as the Box-gum woodland and threatened birds was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The impacts will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset). Impacts to threatened species such as the Box-gum woodland and threatened birds, will also be managed through implementation of a suite of management plans including a VMP, Biodiversity Offset Management Plan (**Appendix H** of the EA), Vegetation Clearing Protocol and Native Fauna Management Plan. Further details of the contents of these plans are provided in Section 4 of the Flora and Fauna Assessment (**Appendix E** of the EA). These plans will be developed during detailed design of the landfill and prior to construction. The plans would be prepared in consultation with relevant government agencies (e.g. DECCW and DSEWPC) and in accordance with best practice guidelines and Recovery Plans for threatened species.
S096_5	SE3 SE2 V3 AQ2 O2 N1 AQ1	Litter management was considered in **Section 5.5.6** of the EA. The LEMP (**Appendix B** of the EA) sets out the control measures to prevent impacts from litter. A Pollution and Litter Management Plan for the operation of the landfill would be prepared and implemented for the site to ensure litter is contained. Total dust emissions due to the operations at the proposed landfill facility have been estimated by analysing the excavation and landfilling operations for three stages of the proposed landfill. Predictions of dust generation were very low and it was concluded that the proposed activities would be unlikely to cause exceedances of the DECCW air quality criteria. Overall, dust concentrations and deposition levels at all residential receivers were very low and it was concluded that air quality impacts arising from dust emissions from the proposed landfill facility would be negligible. Pest and vermin monitoring would be undertaken on a regular basis at the Project Site. Daily cover of the landfill would also discourage vermin and reduce odour emissions. Should the proposed techniques be unsuccessful in deterring pests and vermin, further investigations for additional measures would be undertaken such as engaging a firm of specialist exterminators if required. An assessment of noise impacts was undertaken and is summarised in **Section 8.7** of the EA. With the implementation of noise mitigation measures, the proposed development would comply with the environmental criteria for the site under the neutral meteorological conditions that have been shown to be typical of the site, with minimal impacts to noise level amenity. Odour emissions from the site are predicted to be within acceptable levels at the nearest receiver and at the boundary of the site (**Section 8.5** and **Appendix O** of the EA. Standard management strategies for landfill sites would be employed

Armidale Regional Landfill
Environmental Assessment - Submissions Report
AECOM

		including sub surface and surface gas monitoring and the daily covering of waste. A complaints hotline would be set up in accordance with EPL requirements.
S096_6	SE3	The proposed landfill facility would utilise the Waterfall Way as an access route. It is noted that the Waterfall Way is a National tourist drive and this is acknowledged in the EA. It is also noted that the Waterfall Way is an existing haulage route for several existing facilities in the region. It is considered views from Waterfall Way would be partially masked by existing vegetation and further obscured by offset vegetation once matured. It is not expected the proposed landfill facility would significantly affect or impede tourism in the area. It is noted that Council supports and will continue to support the promotion of tourism in the region through the Tourism Information Centre, provision of funding for local community infrastructure including public facilities for tourists and sponsorship of events to promote tourism in the region.

[redacted]

My objection to the proposed Armidale Dumaresq Landfill relates to the lack of forward planning by this
Council in its approach to rubbish disposal. This council is envisaging using technology (ie a large area
landfill) which is both expensive and inefficient. This project will be undertaken at huge expense to the S097_1
ratepayer, and further, poses a very real threat to the already burdened Gara river system and World S097_2
Heritage National Park beyond.
Armidale Dumaresq Council should be looking forward at a time when waste reductlion principles need
to be applied and not the massive landfill being proposed. This council has obviously not properly S097_3
researched alternative technologies, nor better locations for this particular project. It should be of formost concern that this landfill tip is being located adjacent to the fragile environment of the Gara
River and that this site is just a few short kilometres upstream from New Englands Wild Rivers National
Park.
I urge that this EA not be given approval by Federal and State governments. This issue is about our
responsibilities towards the environment in general, and more specifically,towards World Heritage
areas. Australia has stewardship to these areas on behalf of the international community.It is a shared
and mutual obligation and should be honoured . We should not abandon such responsibilities in favour S097_2
of a "garbage tip".

Submission S097

Issue Number	Topic	Response
S097_1	SE4	Cost to construct was addressed in the site selection process under the criteria Set-up Costs and Operational Costs. Site 7 scored second highest in the former and highest in the latter; which demonstrates that it is the best site as far as these selection criteria are concerned and will be the least cost to develop and operate. Council has the ability to raise funds by loans and any loan will be serviced by the waste management charge that is set by Council. Council has continually advised ratepayers that the proposed new landfill will be paid for by ratepayers by means of a landfill levy that was established in 2006 to fund the new landfill. This levy will be increased and decreased over the period of the staged loans that are required as landfill cells are developed and closed.
S097_2	H1	The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). DSEWPC determined that the proposal constitutes a controlled action under the EPBC Act. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching the downstream Gara River would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.
S097_3	P3	Over 50 alternative sites were considered for the proposed landfill facility as part of the site selection process, including sites within several of the surrounding LGA's. Site evaluation included consideration of environmental impacts, proximity to sensitive receivers and their likely magnitude at each site. The *Regional Landfill Siting Study Final Report* (Maunsell, 2004) was appended to the EA (refer **Appendix C** of the EA) and concluded that the current site was the most suitable of the sites considered with respect to the identified criteria. Resource recovery facilities, including the MRF and Resource Recovery Centre at the existing Armidale Waste Management Centre will be maintained and improved over the long term and throughout the period of operation of the proposed new landfill. The Armidale Waste Management Centre would continue to separate all clean, recyclable material such as glass, plastic bottles and e-waste, from other non-recyclable wastes to be directed to landfill. All green waste would continue to be composted at the existing Armidale Waste Management Centre and made available for reuse. As part of the integrated waste management strategy, Council have considered the implementation of various AWT technologies. Council has demonstrated its commitment via its active pursuit of AWT processes over a number of years. Council is currently trialling and evaluating AWT at the Long Swamp Road Waste Transfer Facility before full scale adoption and implementation. Further facilities and processes to recover materials for re-use will be added in future as markets and recovery costs dictate.

Δεαρ Μσ Γρεενωαψ

I ωριτε το εξπρεσσ μψ χονχερνσ ωιτη της Proposed Armidale Dumaresq Regional Landfill, 06_0220. S098_1
As someone who regularly bushwalks in the adjacent World Heritage area, I am concerned that the landfill will impact adversely on the environmental and scenic values of the area. My artistic practice and spiritual solace are both significantly enhanced by this important wilderness area, to which I regularly take my children.
There are viable alternatives to the proposal, and I urge you to pursue them rather than allow this proposal to be approved. S098_2
Regards
[redacted]

[redacted]

Submission S098

Issue Number	Topic	Response
S098_1	H1 V2	The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA). DSEWPC determined that the proposal constitutes a controlled action under the EPBC Act. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. In the unexpected event that leachate enters the groundwater, diluted concentrations reaching the downstream Gara River would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area. Visual montages of the various viewpoints were considered as part of the EA. All existing trees and known tree heights were included in the visual montages in addition to the final profile of the proposed landfill mass (refer **Figures 30** to **35** of the EA). It should be noted that these montages did not take into account future screening from the proposed biodiversity offset area. Scenic value of the area would be maintained and views of the proposed landfill would be partially masked by existing vegetation and topography and further obscured by offset vegetation once matured.
S098_2	P2	Over 50 alternative sites were considered for the proposed landfill facility as part of the site selection process, including sites within several of the surrounding LGA's. Site evaluation included consideration of environmental impacts, proximity to sensitive receivers and their likely magnitude at each site. The *Regional Landfill Siting Study Final Report* (Maunsell, 2004) was appended to the EA (refer **Appendix C** of the EA) and concluded that the current site was the most suitable of the sites considered with respect to the identified criteria.

Dear Ms Greenway,
I am a resident of the old Dumaresq Shire and despite assurances from Armidale Dumaresq Council about safety issues regarding the development of the site, my concern is not for the aesthetics. Plantings can hide much industrial activity and may provide habitat for some bird and animal species **BUT the risks of toxicity to the Gara River system** ; home to so many aquatic species in a world heritage National park and beyond surely needs more investigation. S099_1
Yours faithfully,
[redacted]

Submission S099

Issue Number	Topic	Response
S099_1	H1 W4	Management measures proposed for the landfill are designed to prevent dirty water runoff during construction and operation of the proposed landfill facility. Mitigation measures include a geosynthetic liner system, water management system and leachate barrier and collection system. These measures have been designed in accordance with the DECCW Landfill Guidelines Benchmark Techniques. An assessment of potential construction and operational impacts on the surface water environment is provided in **Section 8.3** of the EA. With the implementation of environmental controls and mitigation measures to manage dirty stormwater runoff, leachate containment and emergency storage, the magnitude of impacts to waterways would be negligible. The heritage values of the GRAWHA have been considered in **Section 8.12** of the EA. The impact on the GRAWHA has been assessed under the EPBC Act and a referral lodged with DSEWPC (formerly DEWHA)). DSEWPC determined that the proposal constitutes a controlled action under the EPBC Act. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. Diluted concentrations reaching the downstream Gara River would not pollute the existing environment at the OWRNP or have a significant impact on the World Heritage Area.

[redacted]

[redacted]

Fax

To: Dept of Planning Major Projects **From:** [redacted]

Fax: 02 92286455 **Pages:** 6

Phone: 02 92286338 **Date:** September 3, 2010

Re: Armidale Landfill Site MP06_0220 **CC:**

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:** 2 page support material plus no political donations declaration is attached

[redacted]

Submission on Armidale Landfill Project Application MP06_0220

Name: [redacted] B.Agric Sci , M. Agr Sci. Phd)

[redacted]

Email: [redacted]

I fully support this project after reading the environmental assessment.

The reasons for supporting the project are as follows:

Any possible alternate sites on the Western Side of Armidale are in Granite or Basalt country & require material from waste transfer station to be transported back through the city for a much greater distance to a landfill thus increasing costs & transport emissions. These geological structures are inferior for landfills. These areas are probably in adjoining council areas. In several cases the potential sites are in the Macleay river catchment and still flow into Heritage listed areas. There is also considerable rural residential development along the access roads (Bundurra or Boorolong roads) including the Invergowrie residential area. These roads are narrow sealed shire roads causing dangerous problems for heavy vehicles at the Pinnacle. Additional heavy vehicle traffic will pose increased risk to children travelling on the school bus routes & residents who travel daily to work in Armidale.

Why I support the chosen site and the project.

Examination of topographical maps indicates that any feasible site on the preferred geological structures around Armidale indicates that any runoff or leachate will eventually get to the world Heritage listed area. Changing sites does not eliminate the risk. What is needed is a site that allows cost effective engineering solutions to minimise the risks and management practices to reduce the volume of undesirable material going to landfill. The site should have minimum community impact.

The environmental assessment indicates that the site meets all the requirements of various authorities . The site is over one kilometre from Waterfall way at the top of a mini water catchment and thus flood free. The site is protected from the West & South by a ridge minimising the effects of strong southerly & westerly winds. Examination of the EA indicates minimal subsoil water movement or potential problems associated with clay material. The addition of the synthetic liner further reduces the risk of leachate leakage.

Management practices.

The council proposes to restrict access to the landfill and the type of material received. Currently council is conducting trials at the waste transfer station to compost food & green waste. There is major separation of building material & concrete. Trials are proposed to treat mixed municipal waste and remove any additional recyclable material. These operations will not be transferred to the project site. These practices will reduce leachate as well as virtually eliminate attracting vermin to the landfill site and significantly reduce weed contamination to the site or the heritage area.

Community Impacts.

The transport route from the Waste transfer facility to the site is predominantly a state funded highway of reasonable standard. The route has minimal residential development this will continue to be restricted in future by the Sewerage Waste water farm and the Stock route reserves.

The major impact on nearby residents appears to fall on the potential vendor & the son of the other vendor who lives some distance away but overlooks the site. Other residents are protected by the Landform & existing vegetation. The proposed revegetated offset area and proposed operational procedures including noise monitoring and dust control will reduce any potential impact. The Stock Reserve and revegetation of the offset area will make the site virtually invisible to tourists from Waterfall Way if some additional revegetation is under taken on the reserve roadside at the Mining Vale road junction with Waterfall Way and on the reserve descending the hill approaching the Garah River when travelling towards Armidale.

Selective planting & management of the offset vegetation area provides a significant opportunity to protect and maintain the endangered species identified in the EA. It also has the potential to increase the benefits of the wild life corridors.

In summary I believe this project should go ahead because it appears to meet all the statutory requirements, reduces the amount of material going to landfill, has minimal community impact and has the potential to reduce existing contamination risk to the World Heritage Areas. Environmental benefits include reduction of green house gas emissions and assistance to wildlife.

Political donations disclosure statement

NSW GOVERNMENT
Department of Planning

Office use only:

Date received: ___/___/___

Planning application no. MP06_0220

This form may be used to make a political donations disclosure under section 147(3) of the *Environmental Planning Assessment Act 1979* for applications or public submissions to the Minister or the Director-General.

Please read the following information before filling out the Disclosure Statement on pages 3 and 4 of this form. Also refer to the 'Glossary of terms' provided overleaf (for definitions of terms in *italics* below). Once completed, please attach the completed declaration to your planning application or submission.

Explanatory information

Making a planning application or a public submission to the Minister or the Director-General
Under section 147(3) of the Environmental Planning and Assessment Act 1979 (the Act) a person:
(a) who makes a *relevant planning application* to the Minister or the Director-General is required to disclose all *reportable political donations* (if any) made within the *relevant period* to anyone by any *person with a financial interest* in the application, or
(b) who makes a *relevant public submission* to the Minister or the Director-General in relation to the application is required to disclose all *reportable political donations* (if any) made within the *relevant period* to anyone by the person making the submission or any *associate* of that person.

How and when do you make a disclosure?
The disclosure to the Minister or the Director-General of a *reportable political donation* under section 147 of the Act is to be made:
(a) in, or in a statement accompanying, the relevant planning application or submission if the donation is made before the application or submission is made, or
(b) if the donation is made afterwards, in a statement of the person to whom the relevant planning application or submission was made within 7 days after the donation is made.

What information needs to be included in a disclosure?
The information requirements of a disclosure of reportable political donations are outlined in section 147(9) of the Act.

Pages 3 and 4 of the document include a Disclosure Statement Template which outlines the information requirements for disclosures to the Minister or to the Director-General of the Department of Planning.

Note: A separate Disclosure Statement Template is available for disclosures to councils.

Warning: A person is guilty of an offence under section 125 of the *Environmental Planning and Assessment Act 1979* in connection with the obligations under section 147 only if the person fails to make a disclosure of a political donation or gift in accordance with section 147 that the person knows, or ought reasonably to know, was made and is required to be disclosed under section 147.

The maximum penalty for any such offence is the maximum penalty under Part 6 of the *Election Funding and Disclosures Act 1981* for making a false statement in a declaration of disclosures lodged under that Part.

Note: The maximum penalty is currently 200 penalty units (currently $22,000) or imprisonment for 12 months or both.

Glossary of terms (under section 147 of the *Environmental Planning and Assessment Act 1979*)

gift means a gift within the meaning of Part 6 of the *Election Funding and Disclosures Act 1981*. Note. A gift includes a gift of money or the provision of any other valuable thing or service for no consideration or inadequate consideration.

Note: Under section 84(1) of *the Election Funding and Disclosures Act 1981* gift is defined as follows:

gift means any disposition of property made by a person to another person, otherwise than by will, being a disposition made without consideration in money or money's worth or with inadequate consideration, and includes the provision of a service (other than volunteer labour) for no consideration or for inadequate consideration.

local councillor means a councillor (including the mayor) of the council of a local government area.

relevant planning application means:

a) a formal request to the Minister, a council or the Director-General to initiate the making of an environmental planning instrument or development control plan in relation to development on a particular site, or
b) a formal request to the Minister or the Director-General for development on a particular site to be made State significant development or declared a project to which Part 3A applies, or
c) an application for approval of a concept plan or project under Part 3A (or for the modification of a concept plan or of the approval for a project), or
d) an application for development consent under Part 4 (or for the modification of a development consent), or
e) any other application or request under or for the purposes of this Act that is prescribed by the regulations as a relevant planning application,

but does not include:

f) an application for (or for the modification of) a complying development certificate, or
g) an application or request made by a public authority on its own behalf or made on behalf of a public authority, or
h) any other application or request that is excluded from this definition by the regulations.

relevant period is the period commencing 2 years before the application or submission is made and ending when the application is determined.

relevant public submission means a written submission made by a person objecting to or supporting a relevant planning application or any development that would be authorised by the granting of the application.

reportable political donation means a reportable political donation within the meaning of Part 6 of the *Election Funding and Disclosures Act 1981* that is required to be disclosed under that Part. Note. Reportable political donations include those of or above $1,000.

Note: Under section 86 of *the Election Funding and Disclosures Act 1981* reportable political donation is defined as follows:

86 Meaning of "reportable political donation"

(1) For the purposes of this Act, a reportable political donation is:
(a) in the case of disclosures under this Part by a party, elected member, group or candidate—a political donation of or exceeding $1,000 made to or for the benefit of the party, elected member, group or candidate, or
(b) in the case of disclosures under this Part by a major political donor—a political donation of or exceeding $1,000:
(i) made by the major political donor to or for the benefit of a party, elected member, group or candidate, or
(ii) made to the major political donor.
(2) A political donation of less than an amount specified in subsection (1) made by an entity or other person is to be treated as a reportable political donation if that and other separate political donations made by that entity or other person to the same party, elected member, group, candidate or person within the same financial year (ending 30 June) would, if aggregated, constitute a reportable political donation under subsection (1).
(3) A political donation of less than an amount specified in subsection (1) made by an entity or other person to a party is to be treated as a reportable political donation if that and other separate political donations made by that entity or person to an associated party within the same financial year (ending 30 June) would, if aggregated, constitute a reportable political donation under subsection (1). This subsection does not apply in connection with disclosures of political donations by parties.
(4) For the purposes of subsection (3), parties are associated parties if endorsed candidates of both parties were included in the same group in the last periodic Council election or are to be included in the same group in the next periodic Council election.

a person has a financial interest in a relevant planning application if:

a) the person is the applicant or the person on whose behalf the application is made, or
b) the person is an owner of the site to which the application relates or has entered into an agreement to acquire the site or any part of it, or
c) the person is associated with a person referred to in paragraph (a) or (b) and is likely to obtain a financial gain if development that would be authorised by the application is authorised or carried out (other than a gain merely as a shareholder in a company listed on a stock exchange), or
d) the person has any other interest relating to the application, the site or the owner of the site that is prescribed by the regulations.

persons are associated with each other if:

a) they carry on a business together in connection with the relevant planning application (in the case of the making of any such application) or they carry on a business together that may be affected by the granting of the application (in the case of a relevant planning submission), or
b) they are related bodies corporate under the *Corporations Act 2001* of the Commonwealth, or
c) one is a director of a corporation and the other is any such related corporation or a director of any such related corporation, or
d) they have any other relationship prescribed by the regulations.

Political Donations Disclosure Statement to Minister or the Director-General

If you are required under section 147(3) of the Environmental Planning and Assessment Act 1979 *to disclose any political donations (see Page 1 for details), please fill in this form and sign below.*

Disclosure statement details

Name [redacted]

Planning application reference (e.g. DA number, planning application title or reference, property address or other description) MP06_0220

Your interest in the planning application (circle relevant option below)

You are the APPLICANT YES / (NO) OR You are a PERSON MAKING A SUBMISSION IN RELATION TO AN APPLICATION (YES) / NO

Reportable political donations made by person making this declaration or by other relevant persons

Name of donor (or ABN if an entity)	Donor's residential address or entity's registered address or other official office of the donor	Name of party or person for whose benefit the donation was made	Date donation made	Amount/ value of donation
NO DONATION		NIL	NONE	NIL

Please list all reportable political donations—additional space is provided overleaf if required.

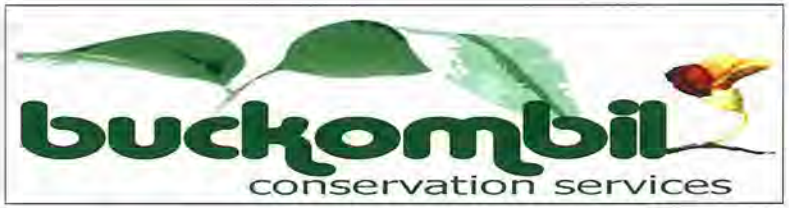
By signing below, [redacted] contained within this statement is accurate at the time of signing.

Signature(s) and D[redacted] 2/9/2010

Name(s) [redacted]

Submission S100

Issue Number	Topic	Response
S100		No objections raised. Letter of support is noted.



A SURVEY FOR THE BOOROOLONG FROG (*LITORIA BOOROOLONGENSIS*), YELLOW SPOTTED TREE FROG (*L. CASTANEA*) AND PEPPERED TREE FROG (*L. PIPERATA)* IN THE GARA RIVER CATCHMENT, NEW ENGLAND TABLELAND, NEW SOUTH WALES.

[redacted] December 2010.

INTRODUCTION

The Gara River is located approximately 10km east and southeast of Armidale at the eastern edge of the New England Tableland, Northern New South Wales (*Figure 1*). The Gara River has its headwaters at approximately 1100m above sea level, gently draining to the edge of the New England Tableland before plunging dramatically into a gorge reserved within the Oxley Wild Rivers National Park, a component of the Gondwana Rainforests World Heritage property.

At the request of the Gara Valley Environmental Protection Association (GVEPA), Buckombil Conservation Services undertook surveys for three frog species, the Booroolong Frog (*Litoria booroolongensis*), Yellow Spotted Tree Frog (*L. castanea*) and Peppered Tree Frog (*L. piperata*), previously known from the Gara River Catchment. These frogs are regarded as locally extinct, none having been documented in the Gara Catchment since the early 1980s (the early 1970s in the case of *L. piperata*).

GVEPA requested that surveys be undertaken for these species in response to a Part 3A (Major Project) proposal submitted by Armidale-Dumaresq Council for a Regional Landfill and Waste Management Facility immediately adjoining the Gara River and currently being considered by the NSW Department of Planning.

HISTORICAL RECORDS AND LEGAL STATUS OF THE TARGET SPECIES

Frog assemblages of the Gara River (and other parts of the New England Tableland) have declined markedly since the 1970s with 4 species regarded as locally extinct. Three of these species are profiled below. The fourth locally extinct species, the Tusked Frog (*Adelotus brevis*), was not targeted by this survey, as it is abundant and secure in coastal habitats.

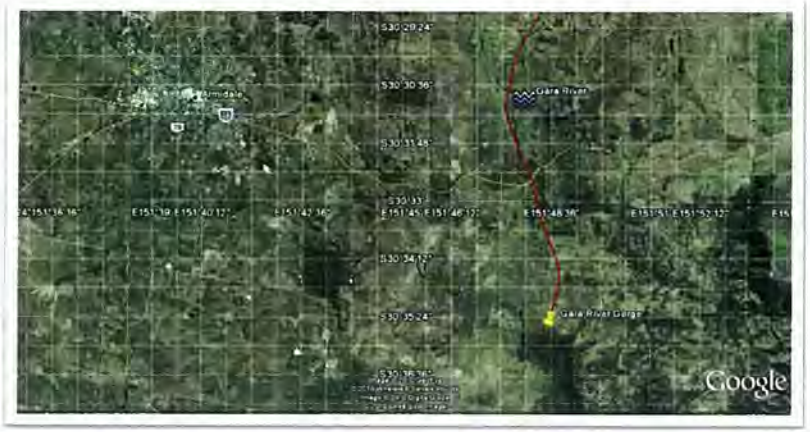


Figure 1: Location of study area (Courtesy Google Earth.)

BOOROOLONG FROG

The Booroolong Frog was historically a relatively common frog in rocky catchments draining the NSW sections Great Dividing Range between the New England Tableland and the Victorian border. The species was named after Booroolong Creek immediately west of Armidale and a large series of collections of this species were made by the University of New England Zoology Department from streams surrounding Armidale until the late 1970s.

The Booroolong Frog has declined precipitously across its entire range, with no recent records from near Armidale since the early 1980s and only very small populations known from the Upper Murray River near the Victorian border. A relatively large (1000+ individuals) population of the species has recently been located in the Upper Namoi (Peel River) catchment, with a smaller population in the adjoining Upper Hunter Valley (Isis River). Small populations have also been found in the last decade to the east and northeast of Tamworth.

YELLOW SPOTTED TREE FROG

The Yellow Spotted historically occurred in two widely disjunct localities; one centered on Armidale, the other in the Southern Highlands of NSW to the east of Canberra. The Northern Tableland population has not been documented since the 1970s. Until 2009 both sub-populations were thought extinct, the re-discovery of a population of this species near Canberra has returned the species from the status of presumed extinct. The Northern Tablelands population is still regarded as presumed extinct.

The Yellow Spotted Tree Frog is a member of the "Bell Frog" complex, utilising reed beds and other dense wetland habitats in still water habitats (including farm dams). This species is listed as Critically Endangered under both the NSW Threatened Species Conservation Act and the Commonwealth Environment Protection and Biodiversity Conservation Act.

PEPPERED TREE FROG

The Peppered Tree Frog was historically (1970s) recorded from five easterly-flowing streams between the Gara River, Oxley Wild Rivers National Park and the Gibraltar Range. A recent (1999) record of the species was made at the Timbarra Plateau to the east of Tenterfield (Graham and Lewis unpubl.), an area considerably north of other known populations.

The Peppered Tree Frog was recently (2009) listed as Critically Endangered in NSW under the Threatened Species Conservation Act (1995) and detailed within the Final Determination as not having been recorded since 1973 (NSW Scientific Committee). This is despite a record of this species having been made in 1999 on the Timbarra Plateau to the east of Tenterfield (Graham and Lewis unpubl.) and a specimen lodged with Professor Michael Mahony and the Australian Museum. The Peppered Tree Frog is listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act (1999).

STUDY AREA AND FIELD SURVEY APPROACH

Nocturnal and diurnal field surveys were undertaken on 23 and 24 November along the Gara River (*Figures 2-4*) between the Waterfall Way (immediately upstream of the proposed landfill) and the Gara River Gorge within Oxley Wild Rivers National Park (part of the Gondwana Rainforests World Heritage property).

Surveys were undertaken on foot along riparian areas of the Gara River, although some surveys were also undertaken around several farm dams in the catchment to target *Litoria castanea*. A total distance of 14km of stream bank of the Gara River was surveyed (*Figures 2-4*).

Although specifically targetting frogs, any other rare or threatened species encountered during the survey were documented.

RESULTS

A moderate flood event had occurred across the Gara River catchment in the days preceding the surveys. Weather conditions on both nights of survey were mild with short and light rainfall experienced on 23 November and warm dry conditions on 24 November.

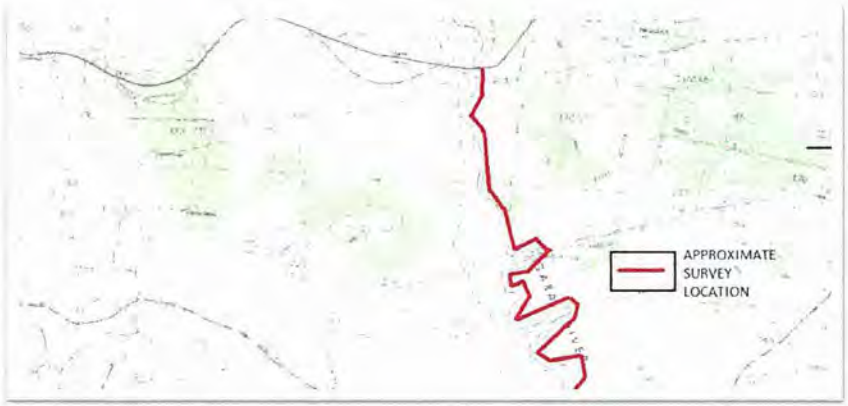


Figure 2: Gara River Frog survey map # 1.

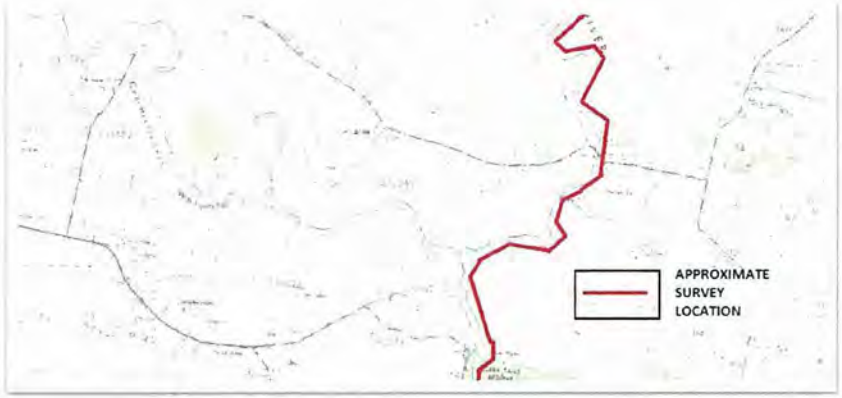


Figure 3: Gara River Frog survey map #2.

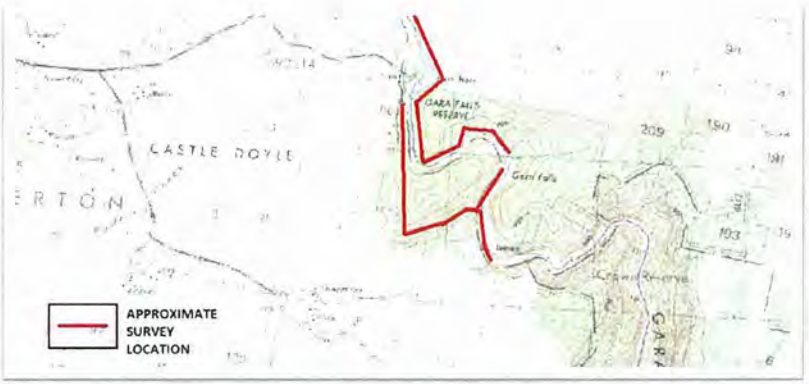


Figure 4: Gara River Frog survey map # 3

A total of ten (10) frog species (*Table 1*) were recorded during the field surveys. These comprised 6 members of the Tree Frog Family (Hylidae) and four (4) member of the Ground Frog Family (Myobatrachidae). Most frogs documented during field surveys are reasonably abundant within a large geographic range; many of them are known from highly disturbed habitats and are not listed as Threatened under NSW and Commonwealth legislation or otherwise regarded as significant. S101_1

The Peppered Tree Frog (*Litoria piperata*) was recorded in the Gara Gorge within Oxley Wild Rivers National Park on 24 November 2010 during field surveys. A single calling adult male was located within stream bank vegetation approximately 300m downstream of the confluence of Powers Creek and the Gara River (*Figure 5*).

Table 1: Frog species recorded during the field assessment.

FAMILY HYLIDAE	
Bleating Tree Frog	*Litoria dentata*
Eastern Dwarf Green Tree Frog	*Litoria fallax*
Broad Palmed Frog	*Litoria latopalmata*
Peron's Tree Frog	*Litoria peronii*
Peppered Tree Frog*#	***Litoria piperata***
Stony Creek Frog	*Litoria wilcoxi*
FAMILY MYOBATRACHIDAE	
Common Eastern Froglet	*Crinia signifera*
Beeping Froglet	*Crinia parinsignifera*
Spotted Grass Frog	*Limnodynastes tasmaniensis*
Smooth Toadlet	*Uperoleia laevigata*

* - Listed as Critically Endangered under the NSW Threatened Species Conservation Act (1995) # – Listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act (1999)

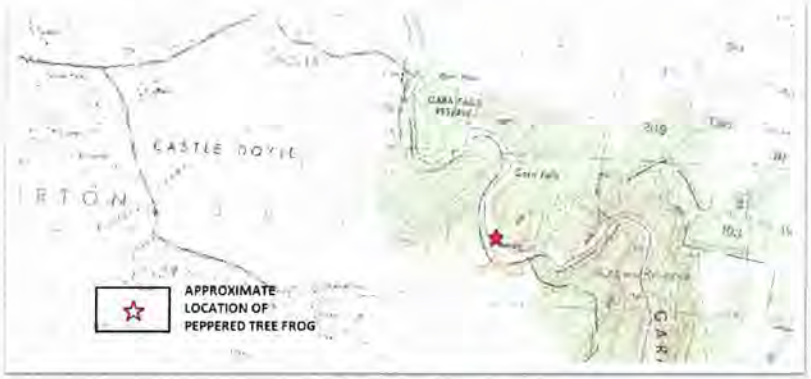


Figure 5: Approximate location of calling male Peppered Tree Frog.

OTHER THREATENED SPECIES RECORDED S101_1

Spotted Tailed Quoll (*Dasyurus maculatus*) – Endangered (EPBC Act) Vulnerable (TSC Act)

Three latrine sites of the nationally Endangered Spotted Tailed Quoll were found during field assessments, two were found in the far northern parts of Oxley Wild Rivers National Park (an area from which the species is frequently recorded), the third was found atop a rock outcrop immediately west of the Gara River on private freehold land between the Waterfall Way and Gara Road. Recent road kill records of the Spotted Tailed Quoll on the Waterfall Way near the Gara River crossing are strongly indicative of a viable breeding population of this Endangered species in the area.

Turquoise Parrot (*Neophema pulchella*) – Vulnerable (TSC Act)

A flock of seven Turquoise Parrots were observed foraging in woodland and native pastures approximately 1km south of the Waterfall Way on the western bank of the Gara River. This site is in very close proximity to the proposed regional landfill.

Little Eagle (*Hiraeetus morphnoides*) – Vulnerable (TSC Act)

A single Little Eagle was observed flying over pastures approximately 200m west of the Gara River and approximately 700m north of Gara Road.

Austral Toadflax (*Thesium australe*) – Vulnerable (TSC Act and EPBC Act)

A total of at least several hundred plants of the nationally Vulnerable Austral Toadflax were observed in several locations between the Waterfall Way and Oxley Wild Rivers National Park. The largest subpopulation was over 100 plants on the western side of the Gara River approximately 1km north of Gara Road. A substantial majority of individuals of the Austral Toadflax were located on private freehold land between the Waterfall Way and Gara Road, with only 2 individuals observed within Oxley Wild Rivers National Park.

CONSERVATION REQUIREMENTS OF THE PEPPERED TREE FROG

The apparent disappearance of the Peppered Tree Frog from the Gara River between the 1970s and 2010 presents several conservation planning challenges and raises a number of questions. The site at which the species has been relocated is difficult to access and dangerous to nocturnally survey, with steep and unstable granite slopes on both sides of the Gara River. At this stage the amount of nocturnal survey effort in this general area is unknown; however it is likely that very limited nocturnal survey effort has been possible in this area.

The disappearance of the Peppered Tree Frog has been attributed to factors including:

1. Chytrid fungus – along with many other stream dependent frogs along the eastern seaboard of Australia it is thought that the Peppered Tree Frog has declined and disappeared due to the infection by Chytrid fungus with associated mass mortality.
2. Declines in catchment quality – catchments draining into the Oxley Wild Rivers National Park from the New England Tableland have been subjected to a range of degrading influences since European settlement (a period of approximately 180 years). These range from broad scale deforestation, to mining, sewage and other effluvia, grazing impacts and urban stormwater runoff. Any or all of these factors may be responsible for the decline in the species.

RECOMMENDATIONS

Given the very high conservation significance of the rediscovery of the Peppered Tree Frog all efforts should be expended to ensure that threats are avoided. It is considered essential that the following actions be taken to avoid or prevent impacts on the species:

- Avoid Chytrid fungus transfer to the site through the implementation of appropriate hygiene protocol.
- Protect the Gara River catchment from degrading influences including (but not limited to):
  * prevention of any further clearance of native vegetation;
  * prevention of contamination of the catchment with toxins and other pollutants; S101_2
  * prevention of sedimentation.

Implementation of the following recommendations is considered essential to assist in understanding and retaining a viable population of Peppered Tree Frogs in the Gara River catchment:

1. It is recommended that further surveys be undertaken to ascertain the population size of the Peppered Tree Frog in this area and the area of occupancy within the Gara River section of the Oxley Wild Rivers National Park. It is recommended that surveys be undertaken as far downstream as the confluence of the Gara and Macleay Rivers.
2. It is recommended that all upstream catchment threats such as vegetation clearance, sedimentation and pollution with toxins be prevented and avoided to ensure the viability of what may yet be found to be a very small relict population of the Critically Endangered Peppered Tree Frog.
3. It is recommended that all users of the Gara River Gorge be required or encouraged to adopt appropriate hygiene protocol to ensure that Chytrid fungus is not introduced to this area.

Submission S101

Issue Number	Topic	Response
S101_1	FF2	The survey work undertaken by Buckombil Conservation Services is acknowledged. An assessment of biodiversity including potential impacts of the proposed landfill facility on threatened species including amphibians, reptiles and threatened birds was presented in **Appendix E** of the EA and summarised in **Section 8.8** of the EA. The Peppered Tree Frog was not recorded in the surveys conducted of the project site. Eight frog species were identified within the project area, however none were listed as threatened. Any impacts on flora and fauna will be minimised through implementation of the mitigation measures outlined in **Section 8.8.16** of the EA and **Section 4** of the Flora and Fauna Assessment. Mitigation measures proposed include minimising the extent of clearing; staged approach to clearing; progressive rehabilitation and revegetation of spent landfill areas; and provision of approximately 61 hectares of compensatory habitat (biodiversity offset).
S101_2	W4 FF5	Specialist studies indicate that the risk of contamination of the Gara River from the proposed landfill is very low. Stringent environmental controls to manage dirty stormwater runoff, leachate containment and emergency storage would be implemented and would reduce the likelihood of impacts to surface and groundwater. Further, the Water and Leachate Management Plan details all aspects of the design and operation of the Leachate Pond, Sedimentation Basin and Dry Basin which will ensure the proposed landfill has negligible impacts on downstream sedimentation and water quality. Mitigation measures to minimise impacts of vegetation clearing on flora and fauna, including threatened species, will be documented in a suite of management plans including a VMP, Biodiversity Offset Management Plan (**Appendix H** of the EA), Vegetation Clearing Protocol and Native Fauna Management Plan. Further details of the contents of these plans are provided in Section 4 of the Flora and Fauna Assessment (**Appendix E** of the EA). These plans will be developed during detailed design of the landfill and prior to construction. The plans would be prepared in consultation with relevant government agencies (e.g. DECCW and DSEWPC) and in accordance with best practice guidelines and Recovery Plans for threatened species.

Appendix A

Appendix A

Appendix A- DoP Request for Supplementary Information

NSW GOVERNMENT | Planning

Contact: Felicity Greenway
Phone: 02 9228 6338
Fax: 02 9228 6466
Email: felicity.greenway@planning.nsw.gov.au

Our ref: MP06_0220

Mr David Steller & Colin McIver
Waste Services
Armidale Dumaresq Council
PO Box 75A
ARMIDALE NSW 2350

Dear David and Colin,

Response To Submissions – Armidale Dumaresq Landfill Project
MP06_0220

I refer to the draft Response to Submissions report lodged with the Department on Monday 20 December 2010, and the recent site visit on Wednesday 22 December 2010.

Both Greg Freeman (the Department's consultant) and myself found the site visit to both Council's existing waste facility at Long Swamp Rd and the proposed site invaluable. Many of the waste initiatives being undertaken at the Long Swamp Rd facility are commendable.

Notwithstanding, the Department has undertaken a preliminary review of the draft Response to Submissions report, and has identified that it will require further information to progress the assessment of the proposal.

In particular, the Department seeks further information on Council's waste strategy, waste data, copies of Council resolutions around waste policy, and some of the economic analysis that led to the proposal being identified as the preferred option. As discussed on site, this information request primarily stems from the need to assess the proposal against the State Government's waste policies and targets, including the amended SEPP (Infrastructure 2007) landfill assessment criteria.

In light of this, can you provide information on or clarify the following:

- Provide some further detail on Council's Waste Strategy, including:
    - copies of relevant Council resolutions regarding waste policy;
    - the likely timing / staging of Council's waste initiatives;
    - how exactly Council propose to achieve diversion targets;
    - how the community is involved in solving the waste generation issues;
    - a copy of the Long Swamp Rd Masterplan (if available); and
    - any commitments made to community education around waste.

- Provide some economic analysis on the alternatives considered and the economies of the proposal chosen. e.g. estimate a cost per tonne and then compare this to the alternatives such as :
    - Cost of baling vs traditional landfilling;
    - Cost of collecting/processing food and garden waste;

- Cost of 240l MGB recycling service;
- Gate price estimates here vs transport elsewhere;
- Details on the current and projected landfill levy, domestic waste charge and differential gate prices as a result of the project.

- Details of the current diversion figure details for the crate based collection recycling service. Can this information be expressed as a diversion kg/household? Have there been any audits done on waste composition? How exactly is Council reaching the diversion targets?

- A critical aspect of the project may be the potential to operate the landfill as closely as possible to a Class 2 landfill (non putrescible), and this will require the capture and treatment of food. How is Council considering food/garden waste will be collected, recovered and composted in the future? What is the expected timing for any changes? Is there any potential to co-compost with biosolids (are these available)? What is the potential markets for any output / products?

In addition, you may wish to discuss how the proposed offset area is going to be secured in perpetuity in more detail. This may be done in further consultation with the Department and DECCW.

The Department requests that you either update, or make an addendum to the submissions report with this information.

If you have any enquires relating to this matter during January 2011, please contact Chris Ritchie on 9228 6413 or chris.ritchie@planning.nsw.gov.au, otherwise I will be in touch in late January 2011

Yours sincerely,

Felicity Greenway
Team Leader - Industry
Major Development Assessment

Cc Danielle Philips - AECOM

Appendix B

Appendix B

Appendix B- Waste Strategy Supporting Documentation

Appendix B(i)

MINUTES MEETING OF ARMIDALE DUMARESQ LANDFILL COMMUNITY CONSULTATIVE COMMITTEE HELD ON TUESDAY 6 MARCH 2004 IN THE COMMITTEE ROOM, ARMIDALE DUMARESQ COUNCIL

Present: C Gadd (Chair), H Beyersdorf, M Bruyn, B Chetwynd (from 5.15pm), D Crisp, P Ducat, L Davis, I Eddie, J Granger, J Holthouse, I Moffatt, D Laird, J Lax, R Patterson.

In Attendance: S Burns, L Finnegan, B Kelly, C MacIver, B Roobol.

ITEM 1
APOLOGIES

Nil.

ITEM 2
CONFIRMATION OF MINUTES
MOVED LAX **SECONDED DUCAT**

That the Minutes of the meeting of 8 December 2003 be confirmed.

The Motion on being put was CARRIED.

ITEM 3
DECLARATION OF INTEREST

(i)	Dr J Lax	Adjoining Property Owner
(ii)	Dr D Crisp	Owner of Site 7
(iii)	Mr J Holthouse	Two properties away
(iv)	Dr I Eddie	Adjoining Property Owner
(v)	Mr L Davis	Adjoining Property Owner
(vi)	Mr D Laird	Between Sites 7 and 9

ITEM 4
BUSINESS ARISING

4.1 Consideration of Final Report by Maunsell Australia on the Armidale Dumaresq Council Regional Landfill Siting Study

A letter from concerned landholders around sites 3 and 4 containing 19 signatures of objectors was received by Chair Colin Gadd and referred to Council for consideration.

MOTION 1
MOVED LAX **SECONDED PATTERSON**

That Armidale Dumaresq Landfill Community Consultancy Committee supports the Maunsell Report.

The Motion was put and CARRIED.

Councillor Beyersdorf returned to the meeting at 5.13pm.

Mr Crisp requested that he be recorded as abstaining from voting on all motions.

MOTION 2
MOVED LAX **SECONDED MOFFATT**

That sites ranked below 2 be dropped off Armidale Dumaresq Council's Property of Interest Register.

The Motion on being put to the vote was CARRIED.

Councillor Chetwynd joined the meeting at 5.15pm.

MOTION 3
MOVED LAX **SECONDED MOFFATT**

That Council undertake concept designs and costings on Site 7 as recommended by Maunsell.

AMENDED MOTION
MOVED DAVIS SECONDED LAIRD

That Site 4(a) be included with concept design and costings to be undertaken on Site 7.

The Amended Motion on being put to the vote was LOST 3 votes to 6.

Motion 3 on being put to the vote was CARRIED.

Mr Laird requested his vote in the negative be recorded.

MOTION 4
MOVED LAX **SECONDED MOFFATT**

That Council be requested to consider the ADLCCC recommendations at the Armidale Dumaresq Council meeting to be held 22 March 2004.

The Motion on being put to the vote was CARRIED.

MOTION 5
MOVED LAX **SECONDED MOFFATT**

That the following action be referred to the Waste Management Committee for consideration:

> **"As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescible material and additional mixed waste in**

order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill."

The Motion on being to the vote was CARRIED.

AMENDED MOTION
MOVED DUCAT **SECONDED PATTERSON**

That Motion 5 be a recommendation to the Waste Management Committee, that

"As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescible material and additional mixed waste in order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill."

The Motion on being put to the vote was CARRIED UNANIMOUSLY.

The Amendment becomes the Motion and on being put, was CARRIED.

Mr Davis left the meeting at 5.57pm.

Councillor Ducat thanked the Chair and the community members of the Committee.

Chair Gadd added his thanks to the Committee.

Mr Crisp thanked the Committee for cooperation after what was a shakey start.

CLOSURE OF MEETING

There being no further business, the meeting closed at 6pm.

C Gadd
CHAIR

ARMIDALE DUMARESQ COUNCIL
WASTE MANAGEMENT COMMITTEE MEETING – 16 MARCH 2004
(A02/0394)

PRESENT: Cr H Beyersdorf (Chairperson) Cr P Ducat, Mr D Scott, Mr C Maciver and Cr B Chetwynd (ex officio member as Mayor).

IN ATTENDANCE: Cr B Roobol, Mr S Burns, B Patterson (ADLCCC), Dr J Lax ADLCCC), Mr I Moffat (ADLCCC) and Mr D Crisp (ADLCCC).

ITEM 1
APOLOGIES Nil

ITEM 2
CONFIRMATION OF PREVIOUS MINUTES
MOVED CR DUCAT **SECONDED MR SCOTT**

That the Minutes of the Waste Management Committee Meeting held on 10 March 2004 be confirmed as a true and correct record.

The Motion on being put to the vote was CARRIED.

ITEM 3
DECLARATION OF INTEREST

Nil

ITEM 4 MATTERS ARISING

4.1 New Landfill – Review by Consultant, Maunsell on Process to Date – Consideration of this Report.

Committee members present all attended the meeting of the Armidale Dumaresq Landfill Consultative Committee held just before this meeting of the Waste Management Committee.

RECOMMENDATION TO COUNCIL
MOVED CR DUCAT **SECONDED MR SCOTT**

That Council notes that Motions 1 to 4 (as listed below) from the Armidale Dumaresq Landfill Community Consultative Committee (ADLCCC) Meeting held 5pm 16 March 2004 are all endorsed by the Waste Management Committee.

Motion 1:

That Armidale Dumaresq Landfill Community Consultancy Committee supports the Maunsell Report.

Motion 2:

That sites ranked below 2 be dropped off Armidale Dumaresq Council's Property of Interest Register.

Motion 3:

That Council undertake concept designs and costings on Site 7 as recommended by Maunsell.

]

Motion 4:

That Council be requested to consider the ADLCCC recommendations at the Armidale Dumaresq Council meeting to be held 22 March 2004.

Also, that Council includes the following strategy in the design of the new landfill as endorsed by the Waste Management Committee on referral and recommendation by Motion 5 from the ADLCCC Meeting 16 March 2004:

> **"As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescible material and additional mixed waste in order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill."**

ITEM 5
DATE AND TIME OF NEXT MEETING

The next meeting of the Waste Management Committee will be held at a time to be determined after the Council Elections and the formation of a new Waste management Committee.

Meeting closed at 6.45pm.

Cr H Beyersdorf
Chairperson

ARMIDALE DUMARESQ COUNCIL
EXTRACT FROM MINUTES OF THE COUNCIL MEETING HELD 22 MARCH 2004

Having declared an interest, Councillor Waters left the Chambers at 6.32pm.

11.008/04*
MINUTES OF THE ARMIDALE DUMARESQ COUNCIL WASTE MANAGEMENT COMMITTEE MEETINGS (10 AND 16 MARCH 2004) AND ARMIDALE DUMARESQ LANDFILL COMMUNITY CONSULTATIVE COMMITTEE MEETING (16 MARCH 2004)
(A02/0394-2 and A03/1136-3)

Acting Director Engineering and Works presenting the Minutes of the Armidale Dumaresq Council Waste Management Committee meetings (held 10 and 16 March 2004), and the Armidale Dumaresq Landfill Community Consultative Committee meeting (held 16 March 2004).

REPORT
The Minutes of the Waste Management Committee meetings of 10 March are included in attachments, and the Minutes of 16 March 2004 and the Minutes of the Armidale Dumaresq Landfill Community Consultative Committee meeting held 16 March 2004 will be circulated prior to the Council meeting.

11.008/04*
MOTION CR DUCAT **SECONDED CR BEYERSDORF**

(i) **That the Minutes of the Armidale Dumaresq Council Waste Management Committee meeting held 10 March 2004 within the attachments, be noted.**

(ii) **That the Minutes of the Armidale Dumaresq Council Waste Management Committee meeting held 16 March 2004 and the Armidale Dumaresq Landfill Community Consultative Committee meeting also held 16 March 2004, to be distributed on 17 March 2004, be noted.**

(iii) **That Council accepts the Maunsell report.**

(iv) **That Council undertake concept design and costings on site 7 as recommended by Maunsell.**

(v) **That all remaining sites contained in the Maunsell Report be removed form the Council's Property of Interest Register.**

(vi) **That Council adopt part motion 4 from the Waste Management Committee being: "As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescrible material and additional mixed waste in order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill".**

The Motion on being put to the vote was CARRIED UNANIMOUSLY.

Councillor Waters returned to the chambers at 6.53pm.

Appendix B(ii)

ARMIDALE ALTERNATIVE WASTE TECHNOLOGY (AWT) IN ASSOCIATION WITH PROPOSED NEW LANDFILL POSITION AND DISCUSSION PAPER JANUARY 2008

INTRODUCTION

The purpose of this discussion paper is to summarise how we have progressed to our current position with the proposal to introduce additional processing equipment (Alternative Waste Technology - AWT) at the Armidale Long Swamp Road waste management facility and to stimulate discussion on where we go to from here.

Council adopted at the Council Meeting held 22 March 2004 the following recommendation by the Armidale Dumaresq Landfill Community Consultative Committee (ADLCCC), the committee that had been formed to provide community input to the site selection process for the new landfill.

"As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescible material and additional mixed waste in order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill."

In response to this Council Resolution, a major project has been initiated to investigate options for and subsequently establish expanded waste processing facilities at the Long Swamp Road Waste Management Facility. This major project is being undertaken in conjunction with the establishment of the new landfill.

The original recommendation/resolution has been refined a bit since 2004 through the various activities that have taken place since then including project tendering, consultation processes and consideration by Council staff, the Waste Management Committee and Council. I would suggest that the project briefing now reads something like this (please feel free to refine a bit more);

"As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to compost and stabilise putrescible material, increase the removal of recyclable materials and minimise the amount of residual waste going to the new landfill such that the new landfill can be routinely operated as a Solid Waste Class 2 Landfill. The new landfill will be licenced as a Solid Waste Class 1 landfill so that Solid Waste Class 1 material can be deposited in the landfill when necessary.

Also, at the Council Meeting held December 2007, Council resolved;

(a) *That the Minutes of the Waste Management Committee Meeting held on 27 November 2007 be noted.*

(b) *That Council Officers proceed to investigate the best process to progress the establishment of a Gore Cover or other AWT option and to report back to the meeting.*

(c) *That Council Officers develop an overarching strategy plan that integrates the use of biodegradable plastic bags available from local retail outlets and a putrescible waste collection service into Council's operations to reduce overall waste to landfill.*

SUBSEQUENT ACTION

Following the above Resolution of Council at the Dec 2007 meeting, the following action has been taken.

1) Cleanaway, the Australian agents and suppliers of the Gore Cover process have been requested to follow up on the presentation given to the Waste Management Committee in Oct 2007 by Paul MacBride from Cleanaway. They have been asked to provide concept designs and costings (capital, operation and maintenance) for the Gore Cover process specific to our needs in Armidale. In particular, they have been asked to address the two main AWT issues that are addressed in more detail later in this document viz.
   - Composting of separated organics (greenwaste and foodwaste) to create a high quality compost.
   - Stabilisation of residual waste before placement in the landfill. In association with this there is the opportunity to remove more recyclable material from the mixed waste stream and we wish to take advantage of that opportunity.
2) Maunsell have been similarly requested to provide concept designs and costings on "other AWT options".
3) Discussions have been held with Sita Environmental Solutions and we expect to receive a proposal outlining their capabilities in providing an AWT solution for Armidale.
4) Research and enquiries continue to be conducted regarding the options for foodwaste collection and in particular regarding the use of compostable plastic bags.

Some information obtained to date is attached and referenced to the meeting Agenda.

ENVIRONMENTAL REQUIREMENTS AND DEFINITIONS RELATING TO SOLID WASTE AND LANDFILLS

To assist with consideration of the issues, some of the important environmental requirements and definitions are provided in an Appendix at the end of this document.

SO WHAT DO WE HAVE TO DO TO MINIMISE WASTE TO LANDFILL AND TO ROUTINELY OPERATE THE NEW LANDFILL AS A SOLID WASTE CLASS 2 LANDFILL?

1. TO MINIMISE WASTE TO LANDFILL

Council and the Community (we) need to;

a) increase the recovery of **recyclable material** from the total waste stream and particularly from mixed waste; and

b) remove more **organic material** which primarily consists of foodwaste from mixed waste destined for landfill. This is a sub-set of a) above but is more importantly relevant to the operation of the new landfill as a Solid Waste Class 2 landfill and is therefore addressed in the next section.

Recyclable material. We are already doing a really good job of sorting recyclable material at source and at the Waste Transfer Stations so that this material is recovered for re-use and does not end up in the landfill. However, in terms of sorting at source, there is still room for improvement; particularly in the commercial and industrial sectors.

Although the community is doing really well in terms of sorting at source, there is still a significant amount of recyclable material ending up in the garbage or mixed waste stream and there is opportunity here to recover more recyclables from the waste destined for landfill.

How do we remove recyclable material from the mixed waste stream?

We need to install additional processing equipment at the Waste Management Facility on Long Swamp Road to sort and recover recyclables from mixed waste. After removal of recyclables, it is proposed that the resultant remnant material or residual waste goes through a stabilising process (composting) followed by a screening process to remove the composted material before the residual waste is deposited in the landfill. The stabilising process is detailed in Section 2 following.

How do we remove organic/putrescible waste from mixed waste?

This is addressed in the next section.

2. TO ROUTINELY OPERATE THE NEW LANDFILL AS A SOLID WASTE CLASS 2 LANDFILL

In order to routinely operate the new landfill as a Solid Waste Class 2 landfill, putrescible waste needs to be routinely removed from the mixed waste stream that is to be deposited in the landfill. Putrescible waste means food or animal matter (including dead animals or animal parts), or unstable or untreated biosolids. It is one of the two principal forms of organic waste that we have to deal with at our waste management facilities. The other principal form is greenwaste or garden waste.

Minimisation of deposition of foodwaste and animal waste in landfill is important not only in terms of minimising waste to landfill but more significantly, it is important in terms of the reduction of leachate and anaerobic gas production inside the landfill.

Greenwaste

We are already doing a really good job of recycling greenwaste by separate collection and chipping processes to form mulch which is readily purchased by the community and is also used in Council's own operations. Very little greenwaste ends up in landfill – usually only when it has been contaminated with other material or placed in mixed waste. Any greenwaste present in the mixed waste stream will be composted similar to foodwaste as described in the following sections. So greenwaste removal from landfill is already well catered for and will continue to be so.

Putrescible Waste

Putrescible waste however, in the form of foodwaste from domestic and commercial premises together with animal waste, is all currently disposed of to landfill and we need to address this so that we can routinely operate the new landfill as a Solid Waste Class 2 landfill.

Other forms of putrescible waste such as grease trap waste, septic tank waste and sewage treatment plant bio-solids are processed at the sewage treatment plant and the end products are utilised at the re-use farm. We do not have to deal with these putrescible wastes at our landfill.

Our putrescible waste primarily consists of foodwaste with a minor requirement for the disposal of animal carcasses. The requirement to be able to dispose of animal carcasses as and when needed is one of the reasons for the proposal to licence the new landfill as a Solid Waste Class 1 landfill. Small animal carcasses should be able to be composted but the larger animals will have to be buried in the landfill as per current practice.

So foodwaste is the main form of putrescible waste that we have to deal with. It is currently disposed of as garbage or mixed waste for landfill in the red-lid wheelie bins or larger skip bins or other containers from commercial premises and it all goes directly to landfill as mixed waste.

How do we remove foodwaste from mixed waste and how do we process it?

It is anticipated that the foodwaste that is currently present in mixed waste will in future be presented at the Long Swamp Road facility in two forms;

a) in an organics collection stream (greenwaste and foodwaste) and

b) in the unsorted waste/mixed waste/garbage stream.

The reality is that not all residents will participate fully in the sorting of recyclables at source or in the proposed foodwaste collection service so we have to be able to accommodate this in our processes. There will continue to be significant quantities of recyclable material and putrescible material in mixed waste/garbage.

a) It is proposed that we provide an organics collection service consisting of a combined greenwaste and foodwaste bin to residential, commercial and industrial areas. This mixed organics material can then be combined with other quality greenwaste material and composted to form a quality compost for public sale and for Council's own operational needs. To provide the composting process, we are particularly interested in the Gore Cover process but we are still open to consideration of other practical options for the Armidale situation.

b) For the putrescible waste (and other organic material) that is in mixed waste, it is proposed that in addition to the processes for removal of recyclables from the mixed waste stream, processes are provided for stabilisation or composting of these organics followed by removal of the composted material from the residual waste before it is deposited in the landfill. We are investigating the possibility of using the Gore Cover process or other suitable process to carry out the stabilisation process.

For collection of domestic organics as outlined in a) above, I suggest that we use the current 240L greenwaste wheelie bin as the receptacle for collection and that collection is undertaken weekly mainly because it would not be acceptable to have foodwaste sitting in household bins for extended periods. Bin liners for the 240L bins should not be necessary if the foodwaste is securely contained in compostable plastic bags or well wrapped in newspaper.

Foodwaste is messy stuff and to facilitate a clean and secure means of collection in the kitchen, I suggest that kitchen bins are lined with compostable (not just biodegradable) bags with tiers to facilitate tidy and secure containment of the foodwaste in the organics bin. Foodwaste can also be wrapped in newspaper which is compostable before being placed in the organics bin.

To ensure that appropriate compostable kitchen bin liners are used, Council could opt to be the supplier of the bags and by virtue of large bulk purchase offer them at minimum cost. Residents could be periodically supplied with bags with the cost being met by an appropriate increase in the annual waste management charge.

The red lid wheelie bin for domestic mixed waste (garbage) will in future undoubtedly sometimes contain putrescible waste that we will have to stabilise through a composting process. To cater for this, we should make compostable bin liners for 140L bins available to those residents who wish to use bin liners in their red lid garbage bins. For those who no longer dispose of foodwaste in their red lid garbage bin, liners for these bins may not be required. Using compostable bin liners for red lid garbage bins will assist in the stabilisation of mixed waste and the reduction of plastic in the residual waste to landfill.

Enquiries have been made about the availability and costs of suitable compostable bags and some information obtained to date is attached to this Paper.

3. IN SUMMARY WE ARE CONSIDERING TO UNDERTAKE THE FOLLOWING

a) Improve community performance generally in sorting of recyclables at source through an education and awareness programme. We will be working with Armidale Recycling Services on this.

b) Investigate the needs of the commercial and industrial sectors for disposal of recyclable material by conducting a survey of these sectors.

c) Introduce services as required following the assessment of the results of the survey in b) above.

d) Continue to encourage sorting at source through penalty fees at waste transfer stations for disposal of unsorted waste.

e) Investigate the needs of the commercial and industrial sectors for disposal of foodwaste material including how it may best be collected by conducting a survey of these sectors.

f) Transpose the existing fortnightly greenwaste collection service to residential premises to a weekly organics collection service to include foodwaste and retain same 240L wheelie bin.

g) Introduce an organics or foodwaste collection service to other premises that have a need to dispose of these materials. Council contract or private enterprise? Benefit of Council contract is control of overall activity across whole community.

h) Conduct a Community Education Programme to explain and encourage participation in the proposed foodwaste/organics collection services and the organics composting processes.

i) Change the weekly mixed waste or garbage collection service using the same size 140L red lid wheelie bin to a fortnightly service.

j) Provide residents with periodic supplies of compostable bin liners for kitchen bins for the disposal of foodwaste and cover the cost of these liners by increasing the annual waste management charge appropriately (estimated to be of the order of $20 per service for 2 bags per week for 8000 services). Also make available for sale at Council offices, compostable bin liners for 140 L and 240 L wheelie bins.

k) Establish a composting process using the Gore Cover or other AWT option at the Long Swamp Road Waste Management facility to facilitate the composting of the collected foodwaste and some of the greenwaste to produce a quality compost – best quality compost.

l) Continue to mulch a proportion of the greenwaste.

m) Install processing equipment at the Long Swamp Road Waste Management facility to process mixed waste and in particular to:

- sort material and remove bulky items and obvious recyclable material to reduce the quantity of material to be processed and stabilised (use a sorting floor?);

- shred compostable/plastic bags so that contents are accessible;
- process the mixed waste to remove recyclable material;
- stabilise (compost) the residual waste to facilitate removal of the putrescible content using the Gore Cover or other AWT option;
- remove the resultant compost by screening before the residual waste is deposited in the landfill – second best quality compost. Could be well utilised at landfill and other Council sites for landscaping and capping purposes.
- Deposit residual waste to landfill.

Important Note

In the above proposals it is important to note that there are two separate composting processes;

- one process composts quality organics in the form of foodwaste and greenwaste (and other organic material as necessary) to create a quality compost; and
- the other process stabilises (composts the putrescibles in and removes the resultant compost from) residual mixed waste before this material is placed in the landfill.

4. CONCLUSION

Members of the Waste Management Committee are invited to consider and debate these issues and proposals with a view to formulating future waste management strategy for Armidale Dumaresq Council and to make appropriate recommendations to Council.

Colin Maciver
Utilities Services Manager,
New England Strategic Alliance of Councils
Tel 02 67 703 849 Fax 02 6772 9275
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e-mail cmaciver@armidale.nsw.gov.au

APPENDIX

SOME IMPORTANT ENVIRONMENTAL REQUIREMENTS AND WASTE MANAGEMENT DEFINITIONS

From the Department of Environment and Conservation / Environment Protection Authority "**ENVIRONMENTAL GUIDELINES: SOLID WASTE LANDFILLS**"

2. ENVIRONMENTAL ISSUES AND GOALS IN LANDFILLING

The environmental issues of primary concern to the community and the EPA in relation to landfilling operations are:

1. Water pollution - i.e. discharges of pollutants to ground and surface waters.
2. Air pollution - i.e. emissions of pollutants to the atmosphere.
3. Land management and conservation.
4. Hazards and loss of amenity.

2.1 WATER POLLUTION

Ground and surface waters can be contaminated by untreated leachate from landfill sites. Leachate is the liquid that percolates through landfills as a result of infiltration and/or decomposition of the wastes. It may cause serious water pollution if it is not properly managed.
Surface water run-off from a landfill site can cause unacceptable sediment loads in receiving waters, while uncontrolled surface water run-on can lead to excessive generation of leachate.

Environmental Goals

Landfill design, monitoring, management and remediation must comply with the following Environmental Goals:

2.1.1 Preventing pollution of water by leachate

Leachate must be controlled within the landfill site, ensuring that neither groundwater nor surface water is polluted.

3.2.3 Proposed landfill categories

For the purposes of regulation, three categories of landfill have been established.

***Inert waste landfill** means any landfill that accepts only inert wastes.*
Inert waste landfills are subdivided into two classes:
• Class 1 - all inert wastes including stabilised asbestos cement and physically, chemically or biologically fixed, treated or processed waste in accordance with any special requirements that may be set by the EPA.
• Class 2 - all inert wastes except stabilised asbestos cement or physically, chemically or biologically fixed, treated or processed waste.

***Solid waste landfill** means any landfill that accepts solid waste. A solid waste landfill may also receive inert waste.*
Solid waste landfills are subdivided into two classes:

• Class 1 - all solid waste including putrescible waste and other wastes approved by the EPA.
• Class 2 - all solid waste with the exception of putrescible waste and other wastes approved by the EPA.
Putrescible waste means food or animal matter (including dead animals or animal parts), or unstable or untreated biosolids.
It should be noted that the Government envisages banning garden wastes from landfills in the near future.

***Hazardous waste landfill** means any landfill that accepts any wastes formally defined as 'hazardous wastes' in statutory instruments (see Appendix B for current definition) or as specifically determined through any special requirements that may be set by the EPA.*

GLOSSARY

Leachate
Liquid released by, or water that has percolated through, waste and which contains dissolved and/or suspended liquids and/or solids and/or gases.

Putrescible waste
Waste being food or animal matter (including dead animals or animal parts), or unstable or untreated biosolids.

Organic waste
One or more of the following types of waste: garden, untreated wood, fibrous, vegetables, fruits, cereals, biosolids, manures, fatty foods, meat, fish and fatty sludges.

From the **"PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997"**:

Part 3 - Interpretative provisions
Division 2 - Special interpretative provisions relating to waste

*"**putrescible waste**" means:*
(a) food waste, or
(b) waste consisting of animal matter (including dead animals or animal parts), or
(b1) grease trap waste, or
(c) biosolids categorised as Stabilisation Grade C in accordance with the criteria set out in the Biosolids Guidelines.

Part 4 Types of solid waste

(1) Municipal waste, being waste consisting of:
(a) household domestic waste that is set aside for kerb side collection or delivered by the householder directly to a waste facility, or
(b) other types of domestic waste (eg domestic clean-up and residential garden waste), or
(c) local council generated waste (eg waste from street sweeping, litter bins and parks).
(2) Biosolids categorised as Restricted Use 2 or 3 in accordance with the criteria set out in the Biosolids Guidelines, manure and night soil.
(3) Waste contaminated with lead from residential premises or educational or child care institutions.
(4) Cleaned pesticide, biocide, herbicide or fungicide containers.
(5) Drained and mechanically crushed oil filters, and rags and oil absorbent materials (not containing free liquids) from automotive workshops.
(6) Disposable nappies, incontinence pads and sanitary napkins.
(7) Food waste.
(8) Vegetative waste generated from agriculture or horticulture.
(9) Non-chemical waste generated from manufacturing and services (including metal, timber, paper, ceramics, plastics, thermosets and composites).

5.5 AWT options for Long Swamp Road Waste Management Facility and
5.6 Putrescible Waste Collection Service

The Position and Discussion Paper prepared by Mr Maciver and provided with the Agenda addressed both these items and the committee discussed both issues together.

Cr Beyersdorf commented that the report was pretty self explanatory and called for comments and input from the committee.

Cr H Beyersdorf commented that he has concerns that there could be complaints and difficulties with Item 3 i) regarding the suggestion that we consider changing the collection of the red-lid mixed waste bin from a weekly service to a fortnightly service.

Cr Whan commented that item 3 i) has to be considered along with item 3 f) in which it is suggested that we consider changing the greenwaste collection service to an organics collection service (greenwaste and foodwaste together) and we consider changing this service from a fortnightly service to a weekly service.

Regarding the concern about the suggested red-lid fortnightly mixed waste collection, Cr Beyersdorf suggested that we could offer a larger bin to those that needed one, at an appropriate additional cost. Mr Maciver added to this and suggested that we consider also offering a "small service" to cater for residents such as old age pensioners that have small waste disposal needs. Other Councils like Port Macquarie Hastings do this. Mr Porter expressed concerns that this could introduce complications for the collection contractors.

Mr Scott referenced the paper presented at the Oct 2007 Coffs Harbour Waste Management Conference by Peter Watson from the Region of Durham, Ontario, Canada. This paper emphasised the importance of education and the need to involve the community in the change process including conducting trials.

Mr J Lax advised that the Canada Bay area in Sydney has been conducting trials and we should try to get information on the results of these trials.
Action: Mr Maciver.

Cr Beyersdorf raised the question as to how the community is provided with compostable bags. Options to be considered include:

- Council provides them and funds by an increase in the annual waste charge;
- Council sell them at Council premises;
- Get shops to sell them.

J Lax made the comment that we need to get plastic bags out of the waste stream.

Item 3 of Mr Maciver's Discussion Paper – the Summary of Suggested Strategy for the Introduction of AWT and the Management of Putrescible Waste was discussed. It was agreed that item i) should be extended so that it now reads "Change the weekly mixed waste or garbage collection service using the same size 140L red lid wheelie bin to a fortnightly service *and consider other options on an as needs basis*"

ARMIDALE DUMARESQ COUNCIL
EXTRACT FROM MINUTES OF WASTE MANAGEMENT COMMITTEE MEETING
6 FEB 2008
(A02/0394)

RECOMMENDATION TO COUNCIL
MOVED CR BEYERSDORF **SECONDED CR WHAN**

(i) That the Position and Discussion Paper on Alternative Waste Technology in association with the new landfill prepared by the Utilities Manager Mr Maciver for the Waste Management Committee be noted.

(ii) That Council endorses the actions listed as follows (Item 3 of the Paper, "Basis for Future Strategy for the introduction of AWT" INT/2008/01505).

- **Improve community performance generally in sorting of recyclables at source through an education and awareness programme. We will be working with Armidale Recycling Services on this.**
- **Investigate the needs of the commercial and industrial sectors for disposal of recyclable material by conducting a survey of these sectors.**
- **Introduce services as required following the assessment of the results of the survey in b) above.**
- **Continue to encourage sorting at source through penalty fees at waste transfer stations for disposal of unsorted waste.**
- **Investigate the needs of the commercial and industrial sectors for disposal of foodwaste material including how it may best be collected by conducting a survey of these sectors.**
- **Transpose the existing fortnightly greenwaste collection service to residential premises to a weekly organics collection service to include foodwaste and retain same 240L wheelie bin.**

Introduce an organics or foodwaste collection service to other premises that have a need to dispose of these materials. Council contract or private enterprise? Benefit of Council contract is control of overall activity across whole community.

- **Conduct a Community Education Programme to explain and encourage participation in the proposed foodwaste/organics collection services and the organics composting processes.**
- **Change the weekly mixed waste or garbage collection service using the same size 140L red lid wheelie bin to a fortnightly service *and consider other options on an as needs basis.***
- **Provide residents with periodic supplies of compostable bin liners for kitchen bins for the disposal of foodwaste and cover the cost of these liners by increasing the annual waste management charge appropriately (estimated to be of the order of $20 per service for 2 bags per week for 8000 services). Also make available for sale at Council offices, compostable bin liners for 140 L and 240 L wheelie bins.**
- **Establish a composting process using the Gore Cover or other AWT option at the Long Swamp Road Waste Management facility to facilitate the composting of the collected foodwaste and some of the greenwaste to produce a quality compost – best quality compost.**

- **Continue to mulch a proportion of the greenwaste.**
- **Install processing equipment at the Long Swamp Road Waste Management facility to process mixed waste and in particular to:**
  - **sort material and remove bulky items and obvious recyclable material to reduce the quantity of material to be processed and stabilised (use a sorting floor?);**
  - **shred compostable/plastic bags so that contents are accessible;**
  - **process the mixed waste to remove recyclable material;**
  - **stabilise (compost) the residual waste to facilitate removal of the putrescible content using the Gore Cover or other AWT option;**
  - **remove the resultant compost by screening before the residual waste is deposited in the landfill – second best quality compost. Could be well utilised at landfill and other Council sites for landscaping and capping purposes.**
  - **Deposit residual waste to landfill.**

ARMIDALE DUMARESQ COUNCIL
EXTRACT FROM MINUTES OF ORDINARY MEETING 25 FEBRUARY 2008

Councillor Waters left Council Chambers at 8.19PM.

ITEM: 11.005/08*	**File No. A07/3443**
TITLE: MINUTES OF THE WASTE MANAGEMENT COMMITTEE SPECIAL MEETING HELD ON 6 FEBRUARY 2008	
RESPONSIBLE OFFICER: Utilities Manager	
EXECUTIVE SUMMARY: • Minutes of the Waste Management Committee Special Meeting held 6 February 2008 with recommendations for endorsement.	
REPORT: Within the attachments are the Minutes from the Waste Management Committee Meeting held 6 February 2008. The Minutes contain recommendations that require endorsement by Council.	
11.005/08* **MOVED CR BEYERSDORF** **SECONDED CR WHAN** **That the Minutes of the Waste Management Committee Meeting held 6 February 2008 and the following recommendations endorsed:** **(a) That Ms Sara Schmude and Mr Trevor Masters be invited to become Community Representatives on the Waste Management Committee.** **(b) (i) That the Position and Discussion Paper on Alternative Waste Technology in association with the new landfill prepared by the Utilities Manager Mr Maciver for the Waste Management Committee be noted.** **(ii) That Council endorses the actions listed as follows (Item 3 of the Paper, "Basis for Future Strategy for the introduction of AWT" INT/2008/01505).** • **Improve community performance generally in sorting of recyclables at source through an education and awareness programme. We will be working with Armidale Recycling Services on this.** • **Investigate the needs of the commercial and industrial sectors for disposal of recyclable material by conducting a survey of these sectors.** • **Introduce services as required following the assessment of the results of the survey in b) above.** • **Continue to encourage sorting at source through penalty fees at waste transfer stations for disposal of unsorted waste.** • **Investigate the needs of the commercial and industrial sectors for disposal of foodwaste material including how it may best be collected by conducting a survey of these sectors.**	

ARMIDALE DUMARESQ COUNCIL
EXTRACT FROM MINUTES OF ORDINARY MEETING 25 FEBRUARY 2008

ITEM: 11.005/08* (Cont)	**File No. A07/3443**
TITLE: MINUTES OF THE WASTE MANAGEMENT COMMITTEE SPECIAL MEETING HELD ON 6 FEBRUARY 2008	
RESPONSIBLE OFFICER: Utilities Manager	

11.005/08*
MOVED CR BEYERSDORF **SECONDED CR WHAN**

- **Transpose the existing fortnightly greenwaste collection service to residential premises to a weekly organics collection service to include foodwaste and retain same 240L wheelie bin.**

- **Introduce an organics or foodwaste collection service to other premises that have a need to dispose of these materials. Council contract or private enterprise? Benefit of Council contract is control of overall activity across whole community.**

- **Conduct a Community Education Programme to explain and encourage participation in the proposed foodwaste/organics collection services and the organics composting processes.**

- **Change the weekly mixed waste or garbage collection service using the same size 140L red lid wheelie bin to a fortnightly service *and consider other options on an as needs basis.***

- **Provide residents with periodic supplies of compostable bin liners for kitchen bins for the disposal of foodwaste and cover the cost of these liners by increasing the annual waste management charge appropriately (estimated to be of the order of $20 per service for 2 bags per week for 8000 services). Also make available for sale at Council offices, compostable bin liners for 140 L and 240 L wheelie bins.**

- **Establish a composting process using the Gore Cover or other AWT option at the Long Swamp Road Waste Management facility to facilitate the composting of the collected foodwaste and some of the greenwaste to produce a quality compost – best quality compost.**

- **Continue to mulch a proportion of the greenwaste.**

ARMIDALE DUMARESQ COUNCIL
EXTRACT FROM MINUTES OF ORDINARY MEETING 25 FEBRUARY 2008

ITEM: 11.005/08* (Cont)	**File No. A07/3443**
TITLE: MINUTES OF THE WASTE MANAGEMENT COMMITTEE SPECIAL MEETING HELD ON 6 FEBRUARY 2008	
RESPONSIBLE OFFICER: Utilities Manager	

11.005/08*
MOVED CR BEYERSDORF **SECONDED CR WHAN**

- **Install processing equipment at the Long Swamp Road Waste Management facility to process mixed waste and in particular to:**
  - **sort material and remove bulky items and obvious recyclable material to reduce the quantity of material to be processed and stabilised (use a sorting floor);**
  - **shred compostable/plastic bags so that contents are accessible;**
  - **process the mixed waste to remove recyclable material;**
  - **stabilise (compost) the residual waste to facilitate removal of the putrescible content using the Gore Cover or other AWT option;**
  - **remove the resultant compost by screening before the residual waste is deposited in the landfill – second best quality compost. Could be well utilised at landfill and other Council sites for landscaping and capping purposes.**
  - **Deposit residual waste to landfill.**

The Motion on being put to the vote was CARRIED UNANIMOUSLY.

Councillor Waters returned to Council Chambers at 8.30PM.

Appendix B(iii)

REPORT TO WMC ON PROPOSED MAJOR WASTE MANAGEMENT PROJECTS AND RESULTANT IMPACT ON FEES AND CHARGES AUGUST 2009

INTRODUCTION

The main purpose of this Report is to provide new members of the Waste Management Committee with historical and background information on how we have progressed to our current position with respect to the two major projects currently on the agenda of the committee.

The two principal projects are the proposed new landfill and the associated Alternative Waste Technology (AWT) processing facility.

THE PROPOSED NEW LANDFILL

Council commenced investigations in about 1994 in the search for a new landfill with the knowledge that the existing landfill at Long Swamp Road has a limited life of about 10 to 15 years with not much scope for extension on the existing site. What land there was available at the Long Swamp Road site was considered best reserved for waste processing activities.

The Existing Landfill site at Long Swamp Road was commissioned in early 1960's with an estimated life of approx. 50 years.

The Existing Site is full and now has to be formally closed. An extension was built in 2005 with a capacity of 4 to 5 years. Due to the delays being experienced in the planning approval process, investigations are currently underway for the construction of another extension with a maximum capacity of the site of about 8 years.

In the search for a new landfill site, preliminary investigations were carried out on many potential sites throughout the Armidale, Dumaresq, Uralla and Guyra local government areas (40+ sites) by Armidale Council staff and consultants.

Key selection criteria in the preliminary search have been geology, hydrogeology, topography and hydrology.

Land at the Armidale Sewage Treatment Plant was investigated but considered not suitable.

Summary Review of the Site Selection and Landfill Development Process

- 1996 Preliminary Regional Landfill Siting Study
- 1996 – 1998 – 7 Sites were identified as potential regional landfill sites
- 1998 – Joint Council Regional Landfill Advisory Committee was formed between Armidale City Council, Dumaresq Shire Council and supported by Uralla Shire Council.
- February 2001- amalgamation of resulted in the formation of the Armidale Dumaresq Council and disbanding of the Committee.
- June 2002 – completion of a Landfill Siting Study by NSW Department of Public Works (Department of Commerce). Site 9 "Ballantrae" off Mining Vale Road was recommended.

- January 2003 – Following objections and a public meeting on the selection of Site 9 as the preferred site, ADC endorsed the formation of the Armidale Dumaresq Landfill Community Consultative Committee (ADLCC) to consider the landfill siting and other waste issues.
- 2003 – A Review of the Site Selection Studies was commissioned and undertaken by Maunsell Australia.
- 2004 – Criteria for site selection was revised in the review including criteria weightings and 11 sites were evaluated.
- 2004 – Of the 11 sites, Site 7 Sherraloy (12 kms east of Armidale) on the Waterfall Way was recommended as the preferred site in the Maunsell Report, was endorsed by ADLCC and was adopted as the selected site by Armidale Dumaresq Council.
- In their recommendation to Council, the ADLCCC included the following "

  "As part of the design considerations for the new landfill, consideration be given to incorporation of additional processing and separation facilities to separate putrescible material and additional mixed waste in order to minimize material going to new landfill and with the ultimate aim of achieving a Class 2 Landfill."
- 2005 Maunsell awarded the contract for "Supply of Project Management Services for the Establishment of the New Landfill for the Armidale region." on Site 7 on the properties Sherraloy and Edington.
- 2005 ADLCC recommended to Council and Council adopted the recommendation that the new landfill should be routinely operated as a Class 2 landfill (non-putrescible waste) but to license the landfill as a Class 1 landfill (permitting putrescible waste) so that putrescible material could be disposed of when necessary.
- This acted as the driver for Council to investigate AWT technologies to process mixed waste containing putrescible material so that it was stabilised before placing in the landfill. A milder leachate would thus be generated in the landfill. Added benefits include the reduction of waste to landfill and recovery of recyclables.
- Since 2005, Maunsell and their sub-consultants have been working on the Planning Approval process and specifically on the preparation of the various component studies and reports that are required for the preparation of an Environmental Assessment.
- A Planning Focus meeting was held in Armidale in June 2005 by the NSW Dept of Planning attended by representatives from other government departments to identify the heads of concern that must be addressed in the Environmental Assessment. These requirements are formally issued by the DOP as the Director General's Requirements or DGRs.
- After the project had commenced and as the EA was being prepared, a change to the EP&A Act saw the introduction of "Part 3A – Major Infrastructure and other projects" and the new landfill project became subject to that process.
- In August 2007, a referral was submitted to the Commonwealth Department of Environment Water Heritage and the Arts under the Commonwealth "Environmental Protection and Biodiversity Conservation Act 1999". The result of the referral was a

determination by the DEWHA that the proposed landfill requires approval under the EPBC Act was declared a "Controlled Action". This means that the project requires the approval of the Commonwealth Minister for DEWHA. Under a bilateral agreement between the NSW Government and the Commonwealth Government, the NSW Government (Dept of Planning) has the responsibility for conducting the environmental assessment under the EPBC Act but the proposed project still requires approval from the Commonwealth Minister.

- DEWHA's main concern in their determination relates to the potential for pollution caused by the landfill's leachate to impact on the Oxley Wild Rivers National Park which is part of the World Heritage listed Central Eastern Rainforest Reserves of Australia. The Oxley Wild Rivers National Park is located approximately 3.9km downstream from the landfill site.
- Delays to the project have been experienced due to the Part 3A planning process change and the outcome of the referral to the Commonwealth DEWHA which resulted in the original DGRs exceeding their expiry date and new or more detailed requirements becoming applicable.
- As part of the new DGR process, the DoP has requested the preparation of a Preliminary Environmental Assessment (PEA). This has been completed and submitted to the DOP.
- A second Planning Focus meeting was held in Armidale on 22 October 2008 and new DGRs were issued in late November 2008.
- Maunsell Australia are currently reviewing and updating the Environmental Assessment in light of the new DGRs. The completed EA is currently scheduled to be placed on public exhibition for 60 days in late June 2009.
- Progress of the project has been provided in 5 Community Newsletters available on Council's Website and in hard copy from Council's Customer Service Section.

REPORT TO WMC ON PROPOSED MAJOR WASTE MANAGEMENT PROJECTS AND RESULTANT IMPACT ON FEES AND CHARGES AUGUST 2009

THE ALTERNATIVE WASTE TECHNOLOGY FACILITY

Investigations into alternative waste management processes have been underway since 2000.

What are AWTs?

- AWT facilities are used for treatment, recovery and disposal of waste material other than straight deposition into landfill.
- Most AWT process will result in residual waste that has to be placed into a landfill.
- Benefits of AWTs include
  - Reduction in the volume of waste to landfill extending the life of the landfill.
  - Recovery of recyclable resources from the waste stream
  - Stabilisation of the putrescible waste.

In the period from 2000 to 2002, four different AWT processes were investigated by Council;-

- Bedminster Digester (Drum composting Port Stephens);
- WTTB.V. of Holland (Rethmanns cell composting Port Macquarie);
- Eco Waste Pty Ltd. (Mining of existing landfill);
- VCU Technology Ltd (Vertical composting).

From these investigations it was determined that there was currently no readily available alternative process suitable for the scale of Armidale's waste requirements and there will still be a need for a landfill for the disposal of residual waste. A suitable landfill site should be pursued immediately.

Council staff continued to investigate and monitor commercial processes that had potential to meet our objectives and the Armidale circumstances.

In January 2005, senior Council officers and Councillors from the Waste Management Committee conducted a tour of landfills and waste processing facilities in some nearby council areas.
The Council areas that were chosen each had something of interest and relevance to ADC objectives as we move down the track of developing the new landfill and associated waste processing activities.
These areas of interest were as follows:

- Grafton – new landfill essentially built to current standards and a traditional open windrow composting process;
- Coffs Harbour – had recently signed a contract to establish an AWT (Alternative Waste Technology) that will remove recyclables from the waste stream to an optimum level and have a stabilised residual material going to landfill;
- Hastings / Port Macquarie – operate the "Rethmanns" AWT Plant at the landfill producing good quality compost from an organics feed and a crudely stabilized mixed waste material for landfill.

- Port Stephens Council / Raymond Terrace – operate the "Bedminster" AWT Plant at the landfill extracting recyclable material, producing quality compost but with some glass and other material contamination issues. An inert residual material goes to landfill. Very costly process.

None of the above processes were considered to be just what we needed and/or were of too large a scale to meet our needs in Armidale.

In a nutshell and to meet the objective of routinely operating the new landfill as a non-putrescible landfill, Council is investigating and plans to introduce two processes

A) The stabilisation (composting) of putrescible material in mixed waste prior to landfilling. This process will include the recovery of clean recyclables in unsorted mixed waste – mostly present in commercial and industrial mixed waste and not so much in residential mixed waste.

B) Composting of organic waste (green waste and food waste). This will involve a change of the current fortnightly garden or greenwaste collection service to a weekly organics (garden waste and food waste) collection service.

Later in 2005, the Gore Cover composting process came to our attention and in September 2005 a similar group of senior staff and Councillors visited the Gore Cover composting trials being conducted by Cleanaway, the Australian agents for the process, at the premises of Camden Soil-mix on the southern outskirts of Sydney. The initial trials involved a pure greenwaste feed and a later set of trials (visited by the Utilities Manager) involved a greenwaste and fruit and vegetable foodwaste feed. Both trials were impressive and the simplicity yet sophistication and effectiveness of the process caught our attention as being quite suitable to meet our needs in Armidale.

The Camden Trials involved composting of organics only so we have been pursuing with Cleanaway the suitability of the Gore Cover process for our main objective, the stabilisation of mixed residual waste. That issue has now been addressed and is covered by the Report and presentation delivered by Paul MacBride from Cleanaway in Dec 2008.

In parallel, we have been considering a tunnel composting/stabilisation process being offered by SITA Environmental.

We are now progressing the procurement process for an AWT Facility for Armidale which will have to be done through a strict tendering process due to the value of the work – in excess of $4million. We are currently seeking the assistance from a section within the NSW Department of Environment and Climate Change who have been specifically tasked with assisting Councils through this process.

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Appendix B(iv)

Item: 6.5 **Ref:** INT/2009/11531
Title: Report on Major Operational Costs and Proposals for Enhanced Waste Management Services for Armidale and the Impact of these on Fees and Charges **Container:** A02/0394-2
Author: Utilities Manager
Attachments: 1. Flowchart of proposed AWT View

Introduction:

The Enhanced Waste Management Services includes Closure of the Existing landfill, Construction of the New Landfill, Provision of an Alternative Waste Treatment Facility (AWT) and Provision of an Organics Waste Collection Service

Council's existing landfill at Long Swamp Road has reached the end of its service life. Extended use has been negotiated with DECCW but there is a relatively urgent need to replace the facility. Closure processes have to be implemented on cessation of use.

Over the last two decades, Council has been investigating options for the replacement of the existing landfill. Coupled with that, we have been looking into ways in which we could enhance our waste management practices and services to comply with waste minimisation and waste recovery objectives.

The two principal projects involved are the new landfill and a waste processing plant. The waste processing plant or alternative waste treatment (AWT) facility will enable the stabilisation of putrescible material in municipal solid waste before the residual waste is placed in landfill. This will permit operation of the new landfill as a Solid Waste (Non-putrescible) landfill. An optional process for inclusion in the AWT is a change in how we deal with foodwaste so that we minimise the amount of this putrescible waste in mixed municipal solid waste. We are considering the introduction of an organics (garden waste and foodwaste) collection service to replace the existing garden waste collection service.

The costs associated with the above projects and additional services will have an impact on Council's fees and charges. This report assesses the likely impact and is provided as a discussion document for the Waste Management Committee and Council to determine the strategic direction for Council's waste management services.

It is important to note that Fees and Charges have already been introduced to commence the funding of the New Landfill and AWT projects.

It is estimated that the New Landfill Levy will have to be increased from its current $61/assessment or occupied dwelling to $83/assessment or occupied dwelling to service a loan to meet the costs of the first stage/cell in the new landfill. Currently the $61 / annum / assessment or occupied dwelling covers the annual Planning Approval and pre-construction costs.

To commence covering the expected development costs relating to the AWT project,

waste rates and charges were increased in 2009/2010 to accommodate development costs and the servicing of a $4,500,000 loan over 30 years. So, similar to the new landfill project, only a small increase in current rates and charges will accommodate the current estimated cost of $5,000,000.

Indicative increased annual operational costs of the New Landfill and annual operational costs for the AWT are also included.

The only new additional charge relates to the closure costs of the old landfill which will be of the order of $15/assessment or occupied dwelling per annum and a 6.7% increase in gate fees. Closure operations are a few years away yet.

Cost Impacts of Proposed Enhanced Waste Management Services

ITEM	Impact on Annual Charge (increase)	Impact on Gate Fees (increase)	Current Charge / Gate Fees	Annual Increase Charge / Gate Fees
Closure of Existing Landfill (Armidale residents only)	$15.00	6.67%	$0.00	$15 / 6.67%
Provision of First New Landfill Cell and Ancillaries	$82.90	N/A	$61.00	$21.90 / 0%
Provision of each subsequent Landfill Cell	$34.20	N/A	N/A	N/A
Annual Transportation Cost from Long Swamp Road to the New Landfill	$21.76	11.67%	N/A	N/A
Provision of an AWT - Stabilisation Mixed Putrescible Waste	$18.65	10.00%	$17.60 / 11.00%	$6.71 / 2.03%
Provision of an AWT - Composting of Organic Waste	$5.66	3.03%		
Annual Operation of the primary and secondary AWT processes	$1.87	1.00%	N/A	N/A
Provision of Organics Collection Service	$0.00	0.00%	N/A	N/A

Report:

History and Background

Over the past two decades it has been evident that the existing landfill at Long Swamp Road was approaching the end of its service life and that a new landfill would be required in the near future.

The case for a new landfill has been thoroughly investigated and it is considered to be an essential need. For a small rural area such as ours which is relatively isolated, experience has shown that, even with the best levels of waste minimisation and waste recovery of recyclable material, there is a need to dispose of residual waste to landfill. The option to transport waste to another landfill outside our Council area is not appropriate for both financial and environmental reasons. It will involve additional transport costs and additional transport environmental impact on top of landfilling costs and will leave Council at the mercy of whatever fees and charges the owner of the external landfill may wish to apply in the future.

In association with the investigations conducted during the new landfill site selection process, Council conducted an extensive community consultation process. Through this process and to minimise possible environmental threat, Council has committed to the routine operation of the new landfill as a General Solid Waste (non-putrescible) landfill although it would be licenced as a General Solid Waste (Putrescible) landfill for operational reasons (e.g. stabilisation plant breakdown or a periodic need to dispose of putrescible material such as dead animals which are not suited to whatever process is adopted for the stabilisation of putrescible waste).

In order to be able to routinely operate the new landfill as a non-putrescible landfill, a waste treatment facility will be required to stabilise the putrescible material that is usually contained in mixed municipal waste before the waste is disposed of to landfill. This process is the principal and essential component of the proposed AWT facility.

To minimise the amount of putrescible material in mixed municipal waste, Council is considering the provision of a secondary and optional process in the AWT, a composting facility. This facility will aerobically convert organic material into compost, a known useful product for the whole community, including Council's own operations.

Linked to this composting process will be an organics collection service (foodwaste and garden waste) which will replace the current garden waste only (greenwaste) collection service. Similarly, organics collection facilities will be provided at waste transfer stations.

The proposed composting and stabilisation processes are aerobic decomposition processes which produce the greenhouse gas carbon dioxide as a by-product. This is vitally important with respect to the new landfill as it will significantly reduces the historic anaerobic decomposition of putrescible waste in the landfill which produces the much more harmful greenhouse gas methane. In addition to the obvious environmental benefit, there is also a financial benefit to be considered which has to be offset against the capital and operational costs of the AWT and that is the reduction of possible future

greenhouse gas emission charges for discharge to the environment similar to the effluent discharge penalties that are currently applied at the sewage treatment plant and may well also apply to stormwater discharge in the future.

The AWT facility would also ensure that the landfill was operated at maximum efficiency by utilising technologies that reduce the waste going to the landfill and maximises material re-use thus increasing the working life of the landfill. These separate processes of the proposed AWT are illustrated on the flowchart on page 5.

At the initial stage of the consideration of a suitable AWT, Council commissioned a Briefing Paper by the University of New England in 2003. This was followed in 2005 by a call for Expressions of Interest for the trialling of an AWT. Although this was unsuccessful, due mainly to the high cost of implementing any of the proposed trials, it did disclose at least one simple process (the Gore Cover technology) that would appear to be applicable to the amount and type of waste generated in Armidale. This is a very important point as many of the proprietary systems available on the market are not suited to the small scale of Armidale's waste stream. Throughout the whole process, Council staff and the Waste Management Committee have kept a watching brief on developments that were taking place in the industry, especially in small scale rural communities similar to Armidale. In January 2005, a group of senior staff and Councillors on the Waste Management Committee conducted a tour of waste management facilities in our neighbourhood. Centres visited were, Grafton, Coffs Harbour, Port Macquarie and Port Stephens. Also visited was a trial held at Camden Soil Mix premises near Sydney in 2005 on the composting of organic waste using the Gore Cover technology. In May 2007, Council's consultants Maunsell Australia (now called AECOM) produced a report on alternative waste technologies appropriate for the management of Armidale's waste.

Maunsell recommended that Council looked at an AWT as part of an integrated waste management system (IWM). This requires looking at the waste management process including collection, sorting, pre-treatment, treatment and disposal as a whole with a view to maximizing efficiency and minimizing what is disposed of to landfill. They also suggested that low technology processes should be preferred and that changes should be gradual enabling Council to ascertain the effectiveness of each stage.

Closure of the Existing landfill

On cessation of use of the Long Swamp Road landfill, final closure shaping and capping processes have to be completed. Details of this project are currently being developed after agreement on the capping technical specifications with DECCW. Construction costs are expected to be in the order of $2.5m to $3m.

Life of Existing Landfill

Investigations of the existing landfill at Long Swamp Road relating to the closure process has revealed that there is opportunity to dispose of more waste as part of the final shaping of the site prior to capping and closure. Discussions with the Department of the

Environment and Climate Change (DECC) has resulted in approval of a staged process for the short-term disposal of waste on the old site. Stage 1 involves the filling with waste of dips and hollows and general shaping up of the mound – the final shaping. Normally most of this final shaping is constructed using capping material. Stage 2 would only be required if further significant delays were experienced with the opening of the new landfill and DECC will provide approval if and when necessary. It would involve the placement of another thin layer on top of the existing mound. At current rates of waste disposal, Stage 1 would allow the existing landfill site to be used for the disposal of waste for over 2 years and Stage 2 would add another 2 years at least.

On completion of use and final shaping, the existing landfill site will have to be closed and capped. The area on top of the capped landfill will be used as working areas for Council's ongoing waste processing activities such as ferrous metal handling; storing and crushing of masonry, garden waste chipping and mulching and general waste re-use stockpiling areas.

The Proposed New Landfill

As stated in the History and Background section, the need for a new landfill has been recognised for many years and the search for a new site has led us to the current project for the development of a landfill on the properties Edington and Sherraloy about 13 kms east of Armidale off the Waterfall Way.

The project commenced in early 2005 and has been slowly advanced to the stage whereby an Environmental Assessment of the proposal is nearing completion and will soon be placed on public exhibition for public consultation as part of the planning application process.

The slow advance of the project has been due to the significant delays that have been experienced in the preparation of the Environmental Assessment. Principal of these has been changes to the planning processes after the project was commenced and the entry of the Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) into the approval process after major concerns had been expressed by the community regarding possible threats to the Gara River and the Oxley Wild Rivers National Park which is part of the Gondwana Rainforests of Australia World Heritage Area (GRAWHA). To put this issue and concern into proper context, it is worth noting here that the whole of the city of Armidale, including the existing landfill and the sewage treatment plant are all located in catchments that drain to Commissioners Waters which flows into the Gara River at the Blue Hole just upstream of the Oxley Wild Rivers National Park.

As part of the project definition for the Environmental Assessment, a preliminary design has been prepared and a pre-design estimate has been prepared based on this outline design. This estimate can be used for the purpose of budget preparation and the estimate of the impact that the cost of the project will have on fees and charges.

The proposed landfill is being designed with a design capacity of 50 years assuming 15,000 Tonnes per annum of residual waste is deposited in the landfill. This annual disposal rate can and will reduce as improvements are made to our community

behaviour in the way of waste minimization & maximisation of recycling. However, this will be counterbalanced to a degree by waste from neighbouring Council areas as they come on board and commence use of the regional landfill facility. By agreement Armidale Dumaresq Landfill is accepting waste destined for landfill from Guyra Shire Council.

The preliminary design of the proposed landfill has assumed 5 cells, each with 10 years capacity. The establishment of the first cell of the landfill will include the majority of all the associated works so it will be relatively expensive but the establishment of each cell at about 10 year intervals after that will be quite a bit less.

Cost of the Proposed New Landfill

An overview of the components and estimated costs for the construction of the first cell of the proposed landfill are provided below.

Land acquisition (still to be negotiated)

Landfill Construction:

• Preliminaries	$100,000
• Site Preparation	$823,900
• Access Road	$898,770
• Perimeter Road	$367,500
• Buildings and Services	$586,925
• Clear Water Diversion Drains	$258,000
• Additional Groundwater Wells	$15,000
• Fencing	$336,100
• Landscaping	$670,000
• Cell 1, ¼ Cell 2 and Ponds	$4,406,500
• Leachate Collection and Return Systems	$251,600
Landfill Construction Total	**$7,714,295 + Land Acquisition**
Plus 15% Contingencies	**$10,021,439 + Land Acquisition**

Each subsequent cell (incl 15% contingencies) **$4,100,000**

Operational costs relating to the new landfill will be much the same as the existing costs for the Long Swamp Road landfill other than the additional cost of transporting the residual waste to the new site. This is estimated to cost about $350,000/annum.

The Proposed Alternative Waste Treatment Facility

The History and Background section outlines the drivers and the objectives of the AWT. At this stage the exact make up of the AWT is still to be finally decided. However it is likely that it will comprise the following main elements.

The essential process - Stabilisation of mixed putrescible waste

1. An enclosed structure for receiving and processing the incoming mixed waste. This would include a sorting floor for the removal of bulky and easily recyclable items. This process and the following metal separator, shredder and trommel will assist with the reduction of the quantity of waste to be stabilised.

2. A metals separator, a shredder (to burst open plastic bags and reduce particle size) and a trommel (to screen off oversize material).

3. A waste stabilisation process.

4. A final screening process.

The optional process - Composting of organic (food and garden) waste

1. An enclosed structure for receiving and processing the incoming organic waste. This would include a sorting floor for the removal of contaminating material.

2: A shredder.

3: A composting process.

4. A final screening process.

The flow chart on page 6 shows the main components of a proposed AWT and how these interact with the waste flow streams. The preliminary thinking for the stabilisation of the mixed putrescible waste and the possible composting of the organic waste is based on using the Gore cover process as this is the most promising of the systems that Council has investigated to date. However, there could be other processes out there that suit our needs and circumstances and they will be explored and assessed during the EOI and selective tendering processes.

Please view attachment INT/2009/11530 Flowchart for proposed AWT.

Location of AWT

The Alternative Waste Treatment Facility will be located at Long Swamp Road to the rear of the recycling facility and transfer station drop-off bins as shown on the site plan

on the next page. By locating the sorting floor close to the rear of the transfer station bins it should be possible to move waste directly from the existing drop off points.

The area outlined in red on the site plan provides space for future material processing growth or landfill extension although the latter is now very unlikely given that DECC has given consent for short-term continued use of the old landfill for disposal of waste as part of the final shaping leading to final closure and capping (please see attachment).

Site Plan Showing Proposed Location of Alternative Waste Treatment Facility

Costs and Impact of the Proposed AWT on Waste Fees and Charges

Indicative costs for the provision of waste processing equipment have been provided by the equipment suppliers, together with estimates of their running costs. Estimates for the accompanying infrastructure are of similar level of accuracy and will be refined early in any implementation plan. Even though the absolute costs of individual items will need to be more carefully defined, the overall cost should be fairly close to the following