SUBMISSIONS REPORT

WOODLAWN EXPANSION PROJECT

MARCH 2011

URS

VEOLIA ENVIRONMENTAL SERVICES

Contents

Tables, Figures and Appendices

Tables

Appendices

Executive Summary

Veolia Environmental Services (Australia) Pty Limited (Veolia) own and operate the Woodlawn Bioreactor and Crisps Creek Intermodal Facility (IMF) south-west of Tarago, NSW. Since commencing operations in 2004, the Woodlawn Bioreactor has received by rail approximately 400,000 tonnes per annum of putrescible waste from the Sydney region. The operation has the capacity to receive additional putrescible waste and in 2010, received approval to receive putrescible waste by road from surrounding areas of regional NSW.

Within this context, and in response to a substantial shortfall in annual available disposal capacity, and to underpin its further development of the overall Veolia Eco-Precinct, Veolia now seeks to extend the level of its operations at the Woodlawn Bioreactor.

Veolia has sought approval to increase the maximum permissible throughput rate of the Woodlawn from 500,000 to 1.13 million tonnes per annum (tpa). To facilitate this increase in capacity, Veolia has also sought to increase the maximum throughput rate of the nearby Crisps Creek Intermodal Facility (IMF) to 1.18 million tpa, as well as to:

- install additional lighting at the Bioreactor site;
- extend the approved hours of operation at the Bioreactor and the IMF site;
- increase the number of truck movements transporting waste to the Bioreactor from the IMF;
- increase the amount of waste transported to the site by road from regional councils from 50,000 to 130,000 tpa; and
- to replace the original consent (DA-31-02-99) through the provision of a Project Approval.

The Project is being assessed pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (MP 10_0012). In accordance with the requirements of the EP&A Act, an Environmental Assessment was prepared to assess the impacts of the Project which was placed on public exhibition from 29 September 2010 to 25 October 2010. During this period submissions were invited from government agencies and the public.

In response to the public exhibition of the Project, 46 submissions were received. Eight submissions were received from Government bodies and 38 from private individuals, groups or companies.

The submissions raised issues in seven key areas. These were:

- Air Quality – Particulates;
- Air Quality – Odour;
- Noise and Vibration;
- Resource Recovery;
- Water Quality;
- Traffic and Transport Infrastructure;
- Socio Economic Impacts; and
- Environmental Assessment Process and Consultation.

Executive Summary

This submissions report documents and responds to the issues raised in the submissions received. A number of technical reports have been prepared to provide further detail in response to issues raised. These are appended to this report. They include:

- Revised Odour and Dust Impact Assessment (SLR Consulting Pty Ltd, 2011);
- Resource Recovery Response (Veolia, 2011);
- Water Quality Report – Response to Submissions (URS, 2011); and
- Supplementary Traffic Impact Assessment (URS, 2011).

The additional investigations undertaken, as well as the responses provided to submissions received by government agencies, members of the public and stakeholder groups did not result in any changes to the Project. Consequently no PPR has been prepared as part of this submissions report.

The findings of the additional investigations indicate that environmental impacts associated within the Project, are manageable through the application of appropriate environmental management measures.

The proposed adoption of the relevant measures identified in the Statement of Commitments into the suite of Veolia's existing environmental management plans (EMP) would be an important component of the Project and reflects the commitment of Veolia and its contractors to mitigation of environmental impacts identified in the Environmental Assessment. The draft Statement of Commitments has been revised to include additional measures to address concerns raised in submissions to the Environmental Assessment regarding traffic, community consultation and odour.

It is considered that all the issues that were raised have been adequately addressed.

Introduction Chapter 1

Veolia Environmental Services (Australia) Pty Limited (Veolia) own and operate the Woodlawn Bioreactor and Crisps Creek Intermodal Facility (IMF). The Bioreactor is a major putrescible waste disposal facility that services the Sydney region and is located within the void of the former Woodlawn Mine. The Crisps Creek IMF services the Bioreactor by transferring containers from rail to road and is located 8km from the Bioreactor. Both facilities were approved by the Minister of Planning on 30 November 2000 and commenced operations in September 2004.

The Woodlawn Bioreactor is an integral part of the larger Woodlawn Eco-Precinct, which consists of two properties, 'Woodlawn' and 'Pylara' and covers an area of approximately 6,000 hectares. The first stage of the Eco-Precinct developed by Veolia was the Woodlawn Bioreactor. The other approved uses within the Woodlawn Eco-Precinct include an Alternative Waste Technology facility and a wind farm.

Since commencing operations in 2004, the Woodlawn Bioreactor has received approximately 400,000 tonnes of putrescible waste from the Sydney region by rail each year, as capped by the original conditions of consent. The operation has the capacity to receive additional putrescible waste and in 2010, received approval to receive putrescible waste by road from surrounding areas of regional NSW.

It is within this context and in response to arbitrary annual waste input limits and a substantial shortfall in annual available disposal capacity, as well as to underpin its further development of the overall Veolia Eco-Precinct, that Veolia seeks to expand operations at the Woodlawn Bioreactor.

The justification for the Woodlawn Expansion Project draws on the Wright Review 2009, an independent strategic review of landfill demand and capacity within the Sydney region and estimated take up of Alternative Waste Technology (AWT) as well as analysis of the regional disposal capacity and demand.

Veolia has sought approval to increase the maximum throughput rate of the Woodlawn Bioreactor from 500,000 to 1.13 million tonnes per annum (tpa). To facilitate this increase in capacity, Veolia has also sought to increase the maximum throughput rate of the nearby Crisps Creek Intermodal Facility (IMF) to 1.18 million tpa, as well as to:

- install additional lighting at the Bioreactor site;
- extend the approved hours of operation at the Bioreactor and the IMF site;
- increase the number of truck movements transporting waste to the Bioreactor from the IMF;
- increase the amount of waste transported to the site by road from regional councils from 50,000 to 130,000 tpa; and
- to replace the original consent (DA-31-02-99) through the provision of a Project Approval.

The Project is being assessed pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (MP 10_0012). In accordance with the requirements of the EP&A Act, an Environmental Assessment was prepared to assess the impacts of the Project.

The Environmental Assessment was placed on public exhibition from 29 September 2010 to 25 October 2010 and was made available on the NSW Department of Planning (DoP) website

Chapter 1 Introduction

(http://www.planning.nsw.gov.au/). During this period submissions were invited from anyone with an interest in the Project.

The 46 submissions that were received in response to the public exhibition were made available on the DoP website. During exhibition, the DoP received eight submissions from Government bodies and 38 private individuals, groups or companies. Details of these submissions have been included in **Appendix A** and **Appendix B.**

Clause 75H(6) of the EP&A Act, requires Veolia to prepare and submit:

- A response to the issues raised in those submissions;
- A Preferred Project Report (PPR) that outlines any proposed changed to the project to minimise its environmental impact; and
- A revised Statement of Commitments (SOC).

This submissions report documents and responds to the submissions received on the Environmental Assessment. There are a number of technical reports which have been appended to this report to address in detail the following key issues raise in the submissions. These are:

- Air quality;
- Resource recovery;
- Water quality; and,
- Traffic management

Following consideration of the submissions, no significant changes to the design described in the Environmental Assessment are proposed, consequently no PPR has been prepared as part of this submissions report.

Following this introductory section, this Submissions Report is structured as follows:

- Section 2 Summary of Submissions - provides a summary of the submissions received in response to exhibition of the proposed Project.
- Section 3 Response to Submissions – provides responses to submissions received by private individuals, stakeholder groups, and State and Local Government agencies.
- Section 4 Additional Assessment – outlines additional assessments undertaken to address the submissions received in response to public exhibition of the Project.
- Section 5 Changes to the Project – outlines changes to the project as a result of the submissions received in response to public exhibition of the Project and additional assessment undertaken.
- Section 6 Revised Statement of Commitments - presents the revised Statement of Commitments for the proposed Project.

Appendices are also provided as per below:

- Appendix A - Government Submissions Summary.

- Appendix B - Public Submissions Summary.
- Appendix C - Revised Odour and Dust Impact Assessment.
- Appendix D - Resource Recovery Response.
- Appendix E - Water Quality Report – Response to Submissions.
- Appendix F - Supplementary Traffic Impact Assessment.

Summary of Submissions Chapter 2

The Proponent received 38 submissions from private sector stakeholders, individuals, group and companies as well as eight submissions from government bodies in relation to the Project. Submissions were accepted until the 25 October 2010. **Table 2-1** below categorises the issues raised in the submissions on the Environmental Assessment received from Government agencies and identifies the relevant section of this report where each issue is addressed in **Chapter 3** of this document.

Table 2-1 Summary of Government Agency Submissions

Issue Category	Government Agency	Submissions Report Section Addressed
Air Quality – Particulates	Department of Environment, climate Change and Water (DECCW)	Section 3.2
Air Quality – Odour	DECCW	Section 3.3
Noise and Vibration	DECCW	Section 3.4
Resource Recovery	DECCW	Section 3.5
Water Quality	Sydney Catchment Authority (SCA), NSW Office of Water (NOW)	Section 3.6
Traffic and Transport Infrastructure	NSW Department of Education and Training (DET), Palerang Council, Goulburn Mulwaree Council.	Section 3.7
Environmental Assessment Process and Consultation	DECCW, Palerang Council, Goulburn Mulwaree Council	Section 3.9

Submissions received from the NSW Roads and Traffic Authority and the Department of Industry and Investment did not raise any issues with proposed Project, and as such are not considered further in this Report.

Table 2-2 below categorises the issues raised in the submissions on the Environmental Assessment received from private sector stakeholders in their submissions and identifies the relevant section of this report where each issue is addressed. The submissions contained below have been grouped by issue. A full list of submissions is included in **Appendices A and B: Summary of Submissions.**

Table 2-2 Summary of Public Submissions

Issue Category	Submission Number (Appendix B)	Section Addressed
Air Quality – Odour	2,3,9,11,12,13,14,15,16,17,19,20,25,26,27, 28,29,32	Section 3.3
Noise and Vibration	2, 12,14,17,18,19,26,29	Section 3.4
Resource Recovery	17,20,26,36,37,38	Section 3.5
Water Quality	17,25,26,27,32	Section 3.6
Traffic and Transport Infrastructure	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34	Section 3.7
Socio Economic Impacts	12,15,17,20,25,26,27	Section 3.8
Environmental Assessment Process and Consultation	2,9,13,20,26,37	Section 3.9

A response to each of the issue categories raised within these submissions is provided in the following section.

3.1 Introduction

This chapter provides responses to each of the issues raised in the government and private sector submissions. Given that submissions from government agencies and private sector stakeholders may have addressed more than one aspect of the Woodlawn Bioreactor Expansion Project, responses have been provided on an issue by issue basis.

3.2 Air Quality – Particulates

The submission from DECCW stated: *"The Air Quality Impact Assessment ("AQIA") was generally conducted in accordance with DECCWs approved methods. The AQIA does not predict any exceedances of DECCW's TSP* [total suspended particulate] *and PM_{10} air quality impact assessment criteria or the project specific odour impact assessment criteria."* The AQIA was based on the proposed increase in annual waste disposal and the approved, but yet unbuilt, AWT plant.

"DECCW has identified some issues with the air quality impact assessments however… given the low impacts predicted in the assessment, resolution of these issues is unlikely to significantly increase concentration predictions, but should be clarified by the Proponent nonetheless."

A revised Odour and Dust Impact Assessment was prepared by SLR Consulting Australia Pty Ltd to address the issues raised by DECCW and local community residents and groups. This is provided in Appendix C. Where appropriate, the statement of commitments has been amended to respond to these issues.

Two air quality issues were raised by DECCW, they are outlined below.

3.2.1 Discharges to air associated with Landfill Gas Engines (LGEs)

DECCW's submission stated that "*The proposed expansion would require 23 additional LGEs for which the AQIA has assessed the PM_{10} emissions. The AQIA however does not evaluate emissions from VOCs, Nitrogen Oxides, and Carbon Monoxides from the engines. These gaseous pollutants are critical indicators of engine performance.* ***Table 3-1*** *below lists the POEO (Clean Air) Regulation 2010 emission limits that would apply to the additional LGEs."*

"Based on the information provided in the AQIA, DECCW was unable to assess if the additional LGEs to be included in the expanded facility will meet these emission requirements. The proponent was requested to provide manufacturer's specifications for the LGEs and confirm that they will comply with the limits in ***Table 3-1*** *below. If necessary, the proponent was requested to outline the measures that would be taken to comply with the emission limit requirements of the POEO (Clean Air) Regulation 2010."*

Chapter 3 Response to Submissions

Table 3-1 Emission limits applicable to the additional landfill gas engines (LGEs), as per the POEO Clean Air Regulation

Air impurity	100 percentile concentration limit
Volatile Organic Compounds (VOCs)	**40** mg/m^3
Carbon Monoxides (CO)	**125** mg/m^3
Nitrogen dioxide (NO_2) or Nitric oxide (NO) or both, as NO_2 equivalent	**450** mg/m^3

Response

The maximum monitored emissions of VOCs, Nitrogen Oxides and Carbon Monoxide from the three existing engines have been compared to the relevant POEO Regulations, and shown to comply with these requirements.

Clause 38 (2) of the POEO regulations states that the requirement for a standard of concentration for volatile organic compounds or carbon monoxide is deemed to be met if either of those standards is achieved. Therefore, even though the standard of concentration for carbon monoxide is exceeded, the standard of concentration of VOCs is met and therefore, all emissions from the landfill gas engines are in compliance with the POEO regulations.

Further details are provided in Section 5.5 of the revised Odour and Dust Impact Assessment prepared by SLR Consulting Australia Pty Ltd, in Appendix C to this Submissions Report.

3.2.2 Modelling of TSP and PM10 emissions

DECCW's submission requested the proponent to confirm the following issues:

"Issues were identified in the assessment of particulate emissions, while it appears that these would not impact the overall outcome of the particulate assessment significantly, the Proponent should confirm that this is indeed the case."

It appears that dozers, which have one of the highest particulate emission rates, have not been included in the particulate emissions inventory (Appendix C). The Proponent was requested to revise the modelling of particulates.

Appendix C of the AQWIA lists PM10 and TSP emission rates in mg/s, whereas the modelling input files use the same values in g/s. The Proponent was requested to revise the modelling to include the correct emission rates".

Response

The dozer was unintentionally omitted from the modelling assessment included in the Environmental Assessment. These dozer emissions have now been included in the inventory for the modelling of particulates.

An emission correction factor of 0.001 was applied to the CALPUFF output in the CALPOST to correct for input of emissions in gm/s, therefore no amendments to the assessment were required for this issue.

The updated dispersion modelling assessment found that the particulate matter emissions associated with the proposed Woodlawn Expansion Project are not predicted to result in exceedances of the relevant criteria for the Project.

Dust deposition levels are predicted to be significantly below the adopted background level and are predicted to result in incremental increases of less than 0.2 g/m^2/month at all receptors.

PM_{10} concentrations are predicted to be less than 7.5 $\mu g/m^3$ as a 24-hour maximum and 0.7 $\mu g/m^3$ as an annual average at all receptors, excluding background concentrations.

Total suspended particulate concentrations are predicted to be less than 0.1 $\mu g/m^3$ as an annual average at all modelled receptors, excluding background concentrations

When the predicted incremental PM_{10} and TSP impacts are aggregated with worst-case background concentrations, the total impacts do not exceed any ambient air quality standards.

Further details are provided in Section 5.3 (Particulate Matter Emission Rates) and Section 6.2 (Particulate Matter / Dust Impact Assessment) of the revised Odour and Dust Impact Assessment prepared by SLR Consulting Australia Pty Ltd, in Appendix C to this Submissions Report.

3.3 Air Quality - Odour

Submissions also raised issues regarding potential odour impacts associated with the facility. A number of submissions from the local community raised issues regarding odour emissions. The DECCW also raised issues regarding odour emissions, as well as technical input data for the odour modelling. The DECCW submission has been used as the basis for structuring responses on this issue, with the addition of a response to community odour experience included in the odour emissions response. Therefore, the primary issues to be addressed are:

- Odour emissions, including waste experiencing leachate recirculation, and community odour experience ;
- Specific Odour Emission Rates (SOER);
- Modelling of volume sources; and
- Odour emissions inventory

These are discussed in more detail below.

3.3.1 Odour emissions

The Submission from DECCW stated that:

"Waste experiencing leachate recirculation has not been included as an odour source in Table 11 of the AQIA. It is not clear if odour monitoring of this activity has been carried out or if the area associated with this activity is accounted for in the odour emissions inventory."

Chapter 3 Response to Submissions

"Also, under the increase of waste disposal scenario, the sizes of active waste tipping and intermediate waste cover increase by factors of 3 and 10 respectively, but for waste experiencing leachate recirculation, the base-case and expansion scenarios use a constant area of 2 ha for the assessment. For effective waste management, it would be expected that with increase in waste area, the area exposed to leachate recirculation would also increase. This increase in odour source should be factored into the odour assessment for the Proposal."

Response

DECCW

Following discussions with DECCW regarding the potential for wet weather conditions to represent worst case conditions, additional odour monitoring was undertaken by SLR Consulting Australia Pty Ltd in January 2011 in wet weather conditions. This odour monitoring data is summarised in Section 5.2 of the revised Odour and Dust Impact Assessment in Appendix C to the Submissions Report, and was used to remodel the potential impacts of the current operations as well as the proposed tonnage increase under worst case conditions.

The results of the odour modelling predicted that the ground-level odour concentrations at the surrounding sensitive receptor locations ranged from 0.5 OU to 3.4 OU and therefore the predicted odour concentrations were below the Project specific odour performance goal of 6 OU. The DECCW criterion of 99th percentile 1-second average means that 6 OU should not be exceeded more than 3.6 days per year. Since the theoretical odour detection limit (that is where no odour impact is experienced) is 1 OU, this criterion is not intended to achieve 'no odour'.

Further analysis of potential odour impacts in the local community includes consideration of the Tarago Village as a potentially sensitive receptor, as well as discussion regarding likely maximum odour concentrations, in addition to the odour criterion required to be assessed by DECCW.

The results of the additional modelling of maximum odour concentrations predict that not only would 6OU performance goal be met by the 99th percentile criterion, but that the maximum odour concentrations for all non Project related receptors would not exceed this goal.

Results of the odour modelling are provided in Section 6.1 of Appendix C.

Community

Veolia has been made aware that odour has been detected from time to time by residents along Taylors Creek Road and Tarago village. This feedback has been used in assessing the performance of site operations and waste management measures.

A summary of a range of waste management and odour control measures that have been trialled since the commencement of operations has been included in Section 1.1.5 of the revised Odour and Dust Impact Assessment prepared by SLR Consulting Australia Pty Ltd in Appendix C to the Submissions Report. These measures include, but are not limited to, the trialling of a range of alternate waste cover systems and the management of leachate in temporary storage ponds, as discussed in **Table 3-2** below.

Table 3-2 Summary of Odour Management Issues at Woodlawn Bioreactor

Odour Source	Issue	Measures Implemented	Future Strategies
Liquid Waste			
Groundwater (ED3 North) Stormwater (ED3 South)	Extraction system contaminated with leachate in late 2005 & early 2006	- Isolated contamination in 2005 - Segregated ED3 to control different liquids in 2006 - Evaporated contaminated liquid by 2007	Continue to manage stormwater and groundwater separately. Regular monitoring to ensure that the extraction system does not become odorous due to any contamination.
Leachate Untreated (ED3N-1 & Leachate Pond) Treated (ED3N-3)	Storage & treatment of leachate outside void from mid 2007	- Collaboration with University of Queensland to develop a method of treatment to eliminate odour from stored leachate from 2007 to 2010 - No leachate extraction from void since end of 2009 - Successful leachate treatment and removal of solids in 2010 - Odour monitoring confirmed negligible odour from this source in 2011	Continue to manage leachate primarily within the void, through re-injection in to the waste mass and treatment as required.
Leachate recirculation – within void	Leachate spraying within the void as a means of reducing leachate volume from 2006	- Refinement of leachate recirculation practices to reduce odour emissions from site. - Method of reinjection through trenches located around the perimeter of the waste enabling leachate to be recirculated through the fresh waste under the intermediate soil cover since early 2010	Continue the practice of leachate re-injection as the preferred means of leachate recirculation to reduce odour emissions.
Solid Waste			
Waste area – within void	Waste area within the void becoming increasingly odorous during wet weather conditions	- Management practices to reduce the potential for these odours including working with the minimum practical tipping face - Ongoing trials of alternative daily cover materials and methods	Best practice material and methods for waste cover will continue to be investigated for their applicability at Woodlawn.
Other Sources			
Potential gas pathways – within void	Gas leakage from a previously active gas extraction system in late 2010.	- Gas well was located and capped to stop this gas leakage in 2010 - Monitoring potential gas pathways as a new odour source in 2011 - New gas wells drilled in areas identified as potential gas pathways for connection into the existing gas extraction system	Continued expansion of the gas extraction infrastructure in areas identified as having potential gas pathways such as around the edge of the void, resulting in increased gas collection for energy production and reducing fugitive odorous emissions.

Veolia will continue to work with the local community to further improve waste management measures at the facility and relating operational updates as a function of the Woodlawn Community Liaison Committee. Veolia has committed to providing odour diaries to interested local community members to assist in monitoring the occurrence of odour events on the site. This has been included as an additional management and mitigation measure in the revised draft Statement of Commitment in Chapter 6.

Chapter 3 Response to Submissions

3.3.2 Specific Odour Emission Rates (SOER)

The Submission from DECCW stated: *"The SOER values cannot be verified based on the information provided. The proponent should provide all assumptions and raw data or sampling reports that were used to derive the emission rates in Tables 10 and 11 of the AQIA to the DECCW for assessment. Furthermore it is not clear if the modelling accounts for increases in SOER due to wet weather. This should be clarified and accounted for in odour modelling in respect to the Proposal."*

Response

A full outline of the calculation method for odour emission rates used within this assessment is provided in the revised Odour and Dust Impact Assessment prepared by SLR Consulting Australia Pty Ltd, in Appendix C to this Submissions Report. All sampling reports, assumptions and raw data have been provided as requested by DECCW.

3.3.3 Modelling of volume sources

The Submission from DECCW stated: *"The proposed Alternative Waste Technology (AWT) storage areas are presented in Table 12 of the Air Quality Impact Assessment [contained in Appendix D of the Environmental Assessment] as volume sources from the CALPUFF emissions input file. This should be included in the modelling of odour for the Proposal."*

Response

Volume sources related to the AWT were unintentionally excluded from the odour modelling in the Environmental Assessment. These sources have now been included in the odour modelling and this inclusion does not result in a change to the predicted odour concentrations at individual receptors.

The revised modelling results provide in Section 6.1 of Appendix C indicate that under worst case operating conditions, odour concentrations will satisfy the Project odour criterion of 6 OU at all surrounding residences in both scenarios modelled, reflecting current and proposed operating conditions under the Woodlawn Expansion Project.

3.3.4 Odour Emissions Inventory

The Submission from DECCW stated: *"The CALPUFF emissions input file lists several area sources, most of which are discussed in the report, supported with their respective SOER values. However, the origins and definitions of the area sources labelled WR3, WR2, WR4, WR4_2, WR5, and WR5_2 are not clear from the report. The compilation of the odour emissions inventory should list all sourced modelled, including the assumptions used for each source, in order to clarify the origins and definitions of all area sources detailed in the Proposal."*

Response

These sources relate to windrows of material located at the approved AWT site. A clear explanation of all odour sources included in the modelling and the derivation of emissions rates has been provided in Section 5.2 of Appendix C.

3.4 Noise and Vibration

Noise and Vibration issues were identified by DECCW and by members of the public through the public consultation process. Specific issues raised included:

- Cumulative noise impacts from the Woodlawn Eco-Precinct;
- Road transport noise; and
- Rail noise and vibration.

These are discussed below.

3.4.1 Cumulative Noise from the Woodlawn Eco-Precinct

The Submission from DECCW stated that: *"Currently the Woodlawn Eco-Precinct ("WEP") supports the Woodlawn Bioreactor and the Crisps Creek Intermodal Facility activities. However as indicated above there are other currently approved, but not yet commenced activities including the AWT and Woodlawn Wind Farm. It is likely that a person not associated with the (WEP) would associate activities on the site as a single entity. However, as there will be various planning approvals regulating the activities, each activity will have specific noise limits associated with it. Even if each activity is assigned the most stringent intrusive noise limit from the INP of 35dB(A), there is the potential for cumulative noise emissions from combined activities to exceed LAeq 15 minutes 35dB(A), even if each activity is complying with its individual limit."*

Response

Operation of an AWT facility has been granted approval for the Project Site but has not yet been constructed at the current time. SLR Consulting provided further information in relation to the cumulative noise impacts for the Woodlawn Expansion Project, which stated:

"The Woodlawn Bioreactor and AWT facility are separately approved and consented developments. Consents for each development were issued as follows:

- *Woodlawn Bioreactor – DA No. 31-02-99; and*
- *AWT – Application no 06_0239 Granted 6 November 2007*

As separately consented developments an Environment Protection License (EPL) should be issued for each development on commencement. An EPL has been issued for the Woodlawn Bioreactor. The AWT has not commenced. It should be noted that the EPL for the Woodlawn Bioreactor does not contain noise limits for the approved AWT facility.

Noise impact assessments have been conducted during the assessment phase of each development considering each facility as a discrete entity. This methodology was accepted by DECCW and DoP at the time of assessment and led to the approval and consenting of each development.

The cumulative impact was determined combining the predicted noise from the Bioreactor, AWT and Wind Farm and comparing this to the amenity criteria.

Although the Woodlawn Bioreactor and AWT facilities are two distinct operations with separate development consents, as part of the Woodlawn Waste Expansion Project noise assessment,

Chapter 3 Response to Submissions

DECCW requested that the cumulative noise impact be examined against the intrusive criteria for the Bioreactor and the AWT operations. DECCW agreed at the time that this was not in strict accordance with the NSW Industrial Noise Policy.

Further, it is not clear how the cumulative noise criterion suggested by DECCW would be applied by DoP without negating the consented limit for the AWT, which is not part of this Project, or reducing the allowable limit for the current proposal to below 35 dBA, which is the minimum noise criteria that is currently set by DECCW.

3.4.2 Road Traffic Noise

DECCW's submission stated: *"The Assessment has not been undertaken in accordance with DECCW's Environmental Criteria for Road Traffic Noise ("ECRTN") as it only presents the contribution noise from Project related traffic, as opposed to local traffic noise and the increase in existing traffic noise levels from the proposal. Additionally, the 1 hour predictions are based on average hourly movements whereas the ECRTN requires consideration of the highest tenth percentile hourly weighted Leq… Additionally the NIA has only considered daytime traffic noise impacts which are appropriate given the operating hours of the Crisps creek Intermodal Facility. However, direct road transport of waste from surrounding councils, if arriving at the Woodlawn Bioreactor at 7am, may impact nearby residents during 'night time' which is from 10pm to 7am.*"

The submission from Palerang Council stated: *"Up to 16 semi trailer truck movements in each direction passing through Bungendore will have some impact on the existing amenity of Bungendore adding increased noise and potential conflicts with other traffic."*

A number of community submissions identified increased traffic noise as a result of the Project as an issue.

Response

The Noise Impact Assessment (NIA) contained in Appendix G of the Environmental Assessment indicates that both Woodlawn Bioreactor and the Crisps Creek Intermodal facility will comply with noise criteria for residential receivers, other than for a number of residences that are owned by the Proponent.

Night-time impacts do not need to be addressed and have been covered by the following statement in the NIA:

> *"Trucks travelling through Tarago and Bungendore are programmed to arrive at the Woodlawn Bioreactor site during daytime hours of 7:00 am to 6:00 pm, however, are expected not to arrive at the site until 9:00 am. This traffic has therefore not been assessed at Tarago and Bungendore before 7:00 am."*

The NIA only assesses the contribution from Woodlawn and does not add this to the existing Project.

This approach was similar to that adopted in previous assessments and the Section 75W modification application.

The matter of average 1 hr traffic numbers being used as opposed to 10th percentile numbers along Collector Road is minor. As recognised by DECCW, all receivers along this route are owned by Veolia.

3.4.3 Rail Noise and Vibration

In its submission, the NSW Department of Education and Training (DET) stated*: "The department is concerned about disruptions to classroom activities from increased rail noise during school hours, and requested that rail movement past the Tarago Public School be limited to the hours before 9:00am or after 3:00pm on school days to minimise classroom disruptions".*

The submission from DECCW also raised rail noise as an issue stating *"It is noted that the NIA does not include an assessment of noise impacts associated with increase rail movements on the NSW Rail Network. DECCW notes that the DGRs did not require such an assessment, and as a consequence potential impacts associated with increased rail movements have not been addressed. However, the conditions of development consent (DA-31-12-99) currently allow the Crisps Creek Intermodal Facility to receive two trains a day, six days a week which is what is proposed in the EA. The Crisps Creek Intermodal Facility currently received one train movement a day."*

A number of community submissions received raised potential rail noise and vibration impacts as an issue.

Response

The Woodlawn Bioreactor has an existing approval that currently permits two train movements per day. While current operating conditions generally only require one train per day, two trains a day are utilised on occasion, such as during peak periods or track possessions. This currently results in two train movements during school hours, which is likely to continue to be the case for the proposed volumes. Therefore, the rail movements resulting from the proposal are not likely to result in additional movement, beyond what is already approved.

These train movements are limited not only by the hours of operations at the Crisps Creek Intermodal Facility, but also based on the train pathways that are provided by the Australian Rail Track Authority (ARTC), which controls the rail network.

Veolia has committed to providing SMS and email notification service to community members to inform them when operational details change. Tarago Public School and any other interested community members would be able to subscribe to this service. This notification service has been included as an additional management and mitigation measure in the revised Statement of Commitment in Chapter 6.

3.5 Resource Recovery

Resource recovery issues were identified by DECCW and by members of the public through the public consultation process, including Global Renewables Australia Pty Ltd (GRA), Total Environment Centre (TEC) and WSN Environmental Solution. Specific issues raised included:

- Resource recovery measures; and
- Economic Impact analysis

The DECCW submission was used as basis for the technical response provided in Appendix D.

Chapter 3 Response to Submissions

3.5.1 Resource recovery measures

DECCW's submission stated: *"Clause 123(a) of State Environmental Planning Policy (Infrastructure) (2007) (SEPP (Infrastructure) 2007) now requires that an assessment or proposals to determine whether there is suitable level of recovery of waste so that the amount of waste is minimised before it is placed in the landfill."*

While this aspect has been discussed in the Environmental Assessment, DECCW expressed a concern that detail in relation to how this will be undertaken in the future should be provided. The submission stated: *"An AWT on the Woodlawn precinct is already approved* (*Project Approval DA 06_0239) but is yet to be constructed and no timetable for construction has been provided by the proposal."*

DECCW noted that the *Waste Avoidance and Resource Recovery Strategy 2007,* detailed targets for waste diversion and recovery in NSW with the aim of increasing the recovery of materials from the major waste streams such as municipal waste, commercial and industrial (C&I) and construction and demolition (C&D) waste.

Resource recovery is also noted in some of the submissions received from interest groups, such as Global Renewables Australia Pty Ltd (GRA), Total Environment Centre (TEC) and WSN Environmental Solution. These submissions made reference to the take up and performance of AWTs as well as resource recovery in general.

Response

Several discussions have been held between Veolia and government agencies regarding waste avoidance and resource recovery issues raised by DECCW in their submission, and in particular clause 123 of the *State Environmental Planning Policy (Infrastructure)* (Infrastructure SEPP).

While Veolia has obtained legal advice to the contrary, for the purposes of this response, Veolia has assumed that clause 123 of the Infrastructure SEPP applies to the Project. On this basis, the primary purpose of the Resource Recovery Response in Appendix D is to discuss the Woodlawn Expansion Project in the context of clause 123 of the Infrastructure SEPP.

The Resource Recovery Response shows that the attributes of the Woodlawn Bioreactor address the all the criterion in clause 123 of the Infrastructure SEPP, that is:

- A suitable level of resource recovery is achieved at the Woodlawn Bioreactor through organics recovery on site as well as:
  - Waste diversion rates for municipal customers to Woodlawn above the current state average.
  - Dedicated source separated recycling services for commercial and industrial waste customers
- Best practice design and operation, and reduced long term impacts of waste disposal through measures to maximise gas capture and renewable energy production
- Avoided land use conflict through its location on a disused mine site and consistency with regional planning strategies
- Optimised transport links by utilising rail transportation, which is three times more efficient than road transport

Based on this information, Veolia believes that a consent authority can be satisfied that the considerations set out in clause 123 of the Infrastructure SEPP have been adequately addressed and that there is no basis to require treatment of the waste by an alternative waste treatment or compositing facility prior to delivery to the Woodlawn Bioreactor. Furthermore, the requirements of the Director General's Requirements regarding relevant waste strategies and guidelines have also been addressed adequately.

Further examples of Veolia's commitment to resource recovery are provided in Appendix D, including a commitment to the development of a Material Recycling Facility in Sydney for Commercial and Industrial waste and continued progress of plans to ensure development of the approved AWT facility at Woodlawn incorporates international best practice technology.

3.5.2 Economic Analysis

The DECCW submission recommended that prior to project approval, the Proponent must "*provide an analysis of the economic impact of the proposal on the gate prices of landfilling in the Greater Sydney Region and on resource recovery and resource recovery facilities in the Greater Sydney Region."*

Concern was expressed by some community members that the proposed tonnage increase at the Woodlawn Facility could create a capacity for Veolia to dominate the putrescible waste market in Sydney.

Response

The Woodlawn Expansion Project is not expected to have a significant impact on the putrescible waste market on the basis that the demand exists for the development of additional residual waste facilities, with the exhausting of approved disposal capacity likely to be the most significant influencing market factor.

Woodlawn will continue to be only a part of the solution for Sydney's putrescible waste. As discussed in Section 4.2 of Appendix D, the findings of independent analyses, including the Wright Report and Richmond Report, were that beyond 2014 the market will operate freely due to the cross over between landfill and AWT gate rates, enabling annual input caps for individual facilities to be phased out altogether.

Further details regarding this economic analysis are provided in Section 4 of the Resource Recovery Response in Appendix D to this Submissions Report.

3.6 Water Quality

Water Quality issues were identified by SCA and NOW and by members of the public through the public consultation process. Specific issues raised included:

- Leachate management and groundwater quality;
- Stormwater management during transport; and
- Groundwater management.

A Water Quality Response was prepared to address the issues raised by SCA, NOW and local community residents and groups. This is provided in Appendix E.

Chapter 3 Response to Submissions

3.6.1 Leachate management and groundwater quality

The Submission received from the SCA stated: "*The SCA remains concerned that leachate generated when the landfill reaches a height at and above the more permeable surface rock near the current rim of the void may contaminate groundwater, surface water or soils outside the void."*

Also, *"The leachate modelling had been done to a maximum waste level of 802.5mAHD, whereas the rehabilitation plan has the height of the centre of the bioreactor as 846.8mAHD, a difference of 44.3mAHD."*

Additionally, a number of residents raised concerns that an increase in size of the Project would result in an increase in perceived problems of toxic spray and leaks as well as potential for water quality impacts caused during the transportation of waste to the site. Residents expressed concern that the toxic spray is contaminating groundwater.

Response

The leachate model was amended to respond to the issues raised by SCA. The leachate modelling was carried out using the cross-sectional model SEEP that simulates horizontal and vertical fluid movement in the saturated and unsaturated zone. The model is shown in Figure 2-1 in Appendix E and indicates that the groundwater flow into the pit is approximately 60 m^3/day, or 0.7 L/sec.

As the waste level rises, the bedrock becomes more weathered, and consequently, as pointed uot by the SCA, is more likely to have a higher permeability. To mitigate the potential for leachate migration from this more weathered zone, Veolia will selectively line the rock faces to ensure that the hydraulic conductivity is less that 1 x 10^{-9} m/sec. Such measures are already being undertaken in selected areas of the wall where higher permeability fracture zones are encountered.

Once the bioreactor is capped, a transient flow SEEP model was used to evaluate the time for the leachate level in the waste mass to rebound to the levels in the bedrock surrounding the void. The model was run to simulate 1,000 years after the bioreactor is capped.

Results from the SEEP modelling suggest that complete rebound of the leachate level would take between 600 and 700 years after the bioreactor is capped. After 1,000 years a leachate mound of approximately 8 m is predicted by the SEEP model.

To assess the impact of the elevated leachate level on the surrounding, recovered water table, seepage velocities from the model, as depicted by the flow arrows in the diagrams, have been reviewed. Inspection reveals that a thousand years after the bioreactor is capped, the seepage velocities will be less than 1 m/year. Therefore, the travel time for conservative contaminants to migrate to the nearest offsite receptor (Crisps Creek) would be centuries after the leachate level has rebounded. This does not take into account the influence of dilution from rainfall recharge, which will attenuate the impact further, and the fact that the leachate quality will be more benign as a result of biochemical degradation processes having been exhausted.

SCA also requested clarification of the final capped surface level with appropriate design drawings. It is important that the final surface level of the cap has sufficient grade to facilitate runoff and to prevent ponding of surface water which would increase infiltration post-closure.

The maximum final post-settlement surface level of the cap is approximately 865 mAHD and the design provides for post-settlement slopes less than 20% and greater than 5% across the whole surface. The final cap contours are shown in Figure 2-10 of the Water Quality Report, a copy of which is contained in Appendix E. These detail that the final levels will join back in to the existing levels around the rim of the void.

3.6.2 Stormwater management during transport

The SCA submission stated that "*The EA assumed doubling of transported waste volumes will not impact on water quality issues above that identified in the original application. Increased transport volumes may affect the degree of contaminated material on the hardstand at the Intermodal and the required sizing of first flush retention areas and sediment basins. Additionally, increased transport from both the Intermodal and road transport from local councils will have some incremental effect on water quality of roads used to access the bioreactor."*

Response

The stormwater collection system at the Intermodal Facility has been designed to collect all stormwater runoff from the hardstand areas via an open channel system on the perimeter of the area. Stormwater runoff generated within this area is diverted underneath the access road and rail sidings through culverts, and to the stormwater treatment system located at the north-eastern end of the Intermodal facility. Collection of the all the stormwater from the sealed surfaces is achieved via an open channel system that runs around the perimeter of the hardstand area. The stormwater system captures the first flush water through a pipe with a flap valve to ensure no back flows. Any excess stormwater is diverted over a weir into a sedimentation pond. Regular inspection of the stormwater system is undertaken to determine the need to clean out any sediment built-up.

The surface water monitoring program for the Bioreactor and IMF sites is contained within the Safe Working Method Statement. Monitoring is being carried out in the Wollondilly and Lake George catchments and include monitoring points located on Crisps Creek and Allianoyonyiga Creek. Monitoring of these locations for surface water quality has already been conducted over a number of years and this monitoring will continue in the future.

All waste is transported to the Intermodal in sealed containers which limit the potential for waste to contaminate the hardstand areas. The waste is also transported from the IMF to the Bioreactor in the same sealed containers, also limiting the opportunity for any contamination of road drains.

Waste transported from local councils will pose no further impacts on local roads beyond that which may occur currently, as any additional road movements anticipated are well within the current design capacity of the roads to deal with potential impacts. Furthermore, local waste trucks will also be covered to minimise the potential for waste contamination.

Further detail is provided in Section 2.3 of the Water Quality Report, a copy of which is contained in **Appendix E**.

3.6.3 Groundwater Management

The NOW requested that the application confirm the annual groundwater interception/extraction volumes which must be licensed under the *Water Act 1912*. These license requirements are

addressed separately to a Part 3A approval and it is the Applicants responsibility to ensure the appropriate licenses are obtained.

The NOW also requested that amendments to the Leachate Management Plan should clearly identify existing points and methods of groundwater extraction. This should include existing and proposed bores for groundwater removal.

Response

Two groundwater dewatering bores (OSW1 and OSW2) are located on site, as shown in Figure 2-11 of **Appendix E**. The two bores (one operational and one back-up) are used to dewater groundwater from beneath the bioreactor liner.

Groundwater levels have been monitored by Veolia in bores drilled around the Woodlawn mine void since 2002. Hydrographs have been prepared and are presented in Figure 2-14 to Figure 2-16 of **Appendix E.** These hydrographs indicate that the fractured rock aquifer is responsive to vertical fluxes associated with rainfall. Horizontal permeabilities are much lower, however, as noted by the low flow rates into the mine void, and these flows are less susceptible to local climatic variability.

NOW raised an issue concerning apparent inconsistencies between groundwater dewatering rates in various supporting documents. This has been clarified in Section 2.6 of **Appendix E**.

The average extraction rate over the 3 years of monitoring between 2007 and 2009 is 0.9 L/sec, which corresponds to 28.7 ML/year. The results of the monitoring and water balance analysis indicate that a groundwater licence entitlement for 30 ML/year would be most appropriate for the site.

Further detail is provided in Section 2.4-2.6 of the Water Quality Report, a copy of which is contained in **Appendix E**.

3.7 Traffic and Transport Infrastructure

Impacts relating to traffic and transport infrastructure were raised by Palerang Council, as well as a number of individual community members and stakeholder groups. The issues raised in the submissions relate to:

- Traffic movements
- Haulage routes.
- Road safety concerns.
- Pavement damage.
- Rail level crossing.

This section provides a response to the issues raised. A supplementary Traffic Impact Assessment (TIA) was prepared to address the issues raised by Council and local community residents and groups. This is provided in Appendix F. Where appropriate, the statement of commitments has been amended to respond to these issues.

3.7.1 Traffic Movements

The submission received from Palerang Council stated: *"the greatest impacts of the proposed development on Palerang will result from the heavy vehicle movements, across Palerang, associated with the transport of water to the Bioreactor."*

In particular, Council raised concern that *"The truck movements on Tarago Road will result in extra wear and tear and consume pavement life that will involve higher levels of maintenance and repair, and will bring forward the need for pavement renewal by Palerang Council."*

A number of community members also raised concerns that increased truck movements would result in further damage to the wider road network.

Palerang Council also advised: *"Table 12-4 of the EA indicates, waste tonnages per annum from each regional area and the number of heavy vehicle movements based on 19 tonnes per vehicle. Council noted that there may be a number of mistakes in the table. The Environmental Assessment indicated that it was intended that the truck movements would be assessed on the worse case scenario of transport over 5 days. This was done for the approval of the 50,000 tonnes but 6 days was used for the ACT waste and 80,000t total. The Palerang figures indicate 4(8) truck movements but should be 2(4) movements per day. Therefore an adjustment to the numbers in the table may be needed."*

Response

The conservative capacity of the vehicles proposed for transportation of local waste by road to the Woodlawn Bioreactor site is assumed to be that of a 19-tonne truck. Road and intersection upgrades are not required to address the physical dimensions, weight and swept path of vehicles associated with the proposed increased activity of the Bioreactor site. The RTA submission stated that "*The RTA has reviewed the volumes and considered them against the rural turn warrants chart in the RTA Road Design Guide. Based on this, and the fact that the intersection has been upgraded to a channelised right turn, the RTA has no objections to the subject development*."

The TIA found that the additional truck movements would not result in a significant impact, and that the road network would still operate well within its practical operating capacity. Accordingly, it is not considered that the additional truck movements would result in any significant impact to the road pavement.

The supplementary TIA prepared for the Project provided in Appendix E amended the figure in Table 3-2 from 4(8) to 2(4). This was a typographical error in the original report and related to movements that are already approved. The revision did not impact on the findings of the original TIA.

3.7.2 Haulage routes

Palerang Council has raised concern that the haulage routes detailed in the Environmental Assessment were not the shortest. Council stated that "*the haulage from each LGA be restricted to the following routes:*

a) *Yass Valley Council and Upper Lachlan Council waste principally via the Hume Highway and MR 79 to MR 268 and Collector Road,*

b) *Eurobodalla waste via the Kings Highway (MR 51) and MR 79 to MR 268 and Collector Road,*

c) *Bega Valley waste via the Kings Highway (MR 51) and MR 79 to MR 268 and Collector Road, or via Browns Mountain to Kings Highway, MR 268 and Collector Road,*

d) *Queanbeyan and ACT waste via Kings Highway, MR 268 and Collector Road,*

e) *Goulburn-Mulwaree waste via MR 79 to MR 268 and Collector Road.*

It was suggested by Council that Veolia should update the transport Code of Conduct to reflect any changes due to the Project and include an option for alternative waste haulage routes.

Response

Future roads planned to be constructed in the area, for example, MR92, will be considered as alternative waste haulage routes, upon their completion, if it is determined that they are suitable for truck movements. This will assist in managing the impact of heavy vehicles on local communities and future growth.

Collector Road west of the Bioreactor site entrance was analysed as a potential route option for vehicles from the west. However, given the current state of the road and the extent of upgrades required, it is not considered to be a feasible option.

Further details are provided in the supplementary TIA in Appendix F to this Submissions Report.

An additional management and mitigation measure has been proposed, and is included in the revised Statement of Commitments included in Chapter 6**.** The new management and mitigation measure specifies that Veolia would update the Code of Conduct for additional regional waste movements. This will assist in managing regional waste movements and would provide opportunity for Veolia to consider future alternative routes, such as MR92, as they are constructed.

3.7.3 Road Safety

Palerang Council expressed road safety concerns with increase in truck movements in the areas of narrow pavement. Council's statement noted: *"there will however be many more trucks passing movements along Tarago Road that raise some extra concerns from a road safety point of view."*

This concern was also shared by a number of residents who raised concern that increased truck movements would add to existing safety concerns, especially in relation to school buses. It was specifically noted that the condition of the Bungendore Road in some parts needs upgrading and the intersection of the Goulburn-Braidwood road and Wallis Street Tarago is very dangerous for trucks turning. Specific concerns were also raised by community members concerning trucks passing along Tarago road.

Response

Roads surrounding the Bioreactor site are located in rural areas, and include State and Council roads. Some road safety issues for motorists have been identified given the horizontal and vertical geometry of some sections and/or existing road surface condition. These issues include poor delineation, reduced carriageway width, inadequate warning signage to curves, condition of road shoulders, potholes, and lack of lighting. Veolia acknowledges these existing safety concerns and, together with the community, will advocate for road improvements in the region – particularly along waste haulage routes.

Further details are provided in the supplementary TIA in Appendix F to this Submissions Report.

An additional management and mitigation measure has been proposed, and is included in the revised Statement of Commitments included in Chapter 6. The new management and mitigation measure specifies that Veolia will work with the local community to address existing road safety concerns. Work has already commenced on this process.

3.7.4 Pavement Damage

Palerang Council stated *"the extra truck movements on Tarago Road will result in extra wear and tear and consume pavement life that will involve higher levels of maintenance and repair, and will bring forward the need for pavement renewal by Palerang Council."*

Council requested, therefore, that an alternative waste haulage route to the Bioreactor, via an upgraded Collector Road from the Federal Highway, be investigated, as detailed above. The council's submission stated: "*It is important that Palerang Council receives financial assistance with these costs that will be ongoing.´*

In the event that this alternative route proposal is deemed unfeasible then Council requested that Section 94 of the *Environmental Planning & Assessment Act 1979* be applied to haulage operations on MR 268 and Collector Road to compensate the councils responsible for the upkeep of these roads for damage to pavements that is likely to result from this haulage.

Council also requested that the applicant be required to contribute to the road widening/upgrading works on Tarago Road to address safety concerns. The council stated: *"Ideally the road needs to be widened to have a minimum 7.0m wide seal with a minimum 1.0m wide shoulders over its entire length."* This could be achieved by the applicant being required to undertake certain projects to address the worst sections or could be covered by the applicant collecting an agreed extra s.94 contribution per tonne per km for the purpose, from the local government bodies hauling to the bioreactor.

Response

The additional truck movements are not considered to be likely to result in a significant impact on the pavement, as the road network would still operate well within its capacity. The road network is a combination of State and council roads. The owners of the road network are responsible for the upkeep of the roads through direct and indirect maintenance.

The main haulage route, between the IMF to Woodlawn Bioreactor, is subject to existing Section 94 contributions. Regional waste deliveries by road are not significant in comparison to this volume or to existing traffic movements along these haulage routes.

Chapter 3 Response to Submissions

3.7.5 Delays at the rail level crossing

A number of residents raised concern over increased events where trains temporarily park across Bungendore Road level crossing after leaving the Crisps Creek Intermodal Facility. Residents were particularly worried about the access for emergency vehicles given the increased likelihood of the rail crossings being blocked by trains due to the increased rail traffic.

Response

At present, the train is required to temporarily park across Bungendore Road level crossing after leaving the Crisps Creek Intermodal Facility. This is to enable the train driver to activate the manual switching device to allow for travel through to Goulburn. The obstruction of the level crossing has the potential to impact on motorist travelling on this part of Bungendore Road.

Veolia has received correspondence from Australian Rail Track Corporation (ARTC) advising that work has commenced to alter the method of train operation on the Canberra line to an electronic switching system known as 'Train Working Order'. Under this working, trains will no longer be required to stop at the Tarago platform and block the Bungendore Roads level crossing. ARTC expects to finalise this work in 2011. A copy of this letter is included as an Appendix in the supplementary TIA, which is Appendix F to this Submissions Report.

3.8 Socio-Economic Impacts

A number of socio-economic issues were raised, including general amenity issues.

Additionally, a number of residents have raised concerns that the Project would have an adverse impact on the value of their property and that of the community in general. Some submissions noted that the Project could have the potential to negatively impact the future subdivision and sale of land in the area.

These issues are addressed below.

3.8.1 General Amenity Issues

General amenity impacts were raised by residents which relate to having a general adverse impact on the lifestyle of the village.

Response

The Woodlawn Bioreactor Environmental Management Plan (EMP) provides an environmental management tool for the operation of the site and a means of identifying and concentrating on the key environmental, operational and rehabilitation issues for the facility. Chapter 6 of the Environmental Assessment provided an overview of the existing environmental management provisions that are in place for both the Bioreactor and the Crisps Creek IMF. The EMP will assist in managing adverse environmental impacts which will help reduce and potential negative impact that the Project may have on the amenity of the local community, and will be updated to reflect any changes resulting from the Project.

Veolia has committed to a program of community consultation, including the establishment of a website, and electronic notification services for registered users. The website address will be www.veoliaes.com.au/woodlawn. This website will include community updates regarding the operations at Woodlawn. It will also provide an opportunity for the community to subscribe to a SMS and email notification service which Veolia will use to issue community updates and inform the community of any operational changes. This has been included as an additional management and mitigation measures in the revised Statement of Commitment in Chapter 6. This community consultation process will assist Veolia in managing potential amenity impacts.

3.8.2 Pests and Vermin

Impacts on amenity have also been raised by members of the public, some of who are concerned that the Project would lead to an increase in flies and vermin in the area.

Response

An increase in the amount of flies and vermin in the area is not expected as management and mitigation measures are already in place at the facility. If required, these measures would be extended and incorporated into the Environmental Management Plan to manage the proposed increase in annual input rates at the facility.

3.8.3 Property value and future development

A number of residents have raised concerns that the Project would have an adverse impact on the value of their property and that of the community in general.

Some submissions also noted that the Project could have the potential to negatively impact the future subdivision and sale of land in the area.

Response

Chapter 13 of the Environmental Assessment assesses the socio economic impact of the Project.

There is no evidence that the land values within the community would experience a decline as a result of the Project. The Project represents an increase to the annual increase rates at the facility only.

It is not considered that the Project would restrict future development within the locality, beyond current operations.

3.9 Environmental Assessment Process and Consultation

A number of public submissions expressed the view that there were issues in relation to the high technical content and upstream impacts in the Environmental Assessment, as well as procedural issues relating to community consultation. These are considered below.

3.9.1 Detail in Environmental Assessment

Some members of the public expressed the view that the level of detail contained in the Environmental Assessment is too high for general consumption and that the general assertions contained in the Environmental Assessment do not allow for constructive public consultation.

WSN also raised the completeness of the Environmental Assessment as an issue regarding addressing upstream environmental impacts and transport arrangements.

Response

The Environmental Assessment (EA) was written for the general public. The technical content in Volume 2 of the Environmental Assessment supported the overarching Environmental Assessment document, and provided a level of technical detail required for the document. The Environmental Assessment addresses the Director General's Requirements issued by the Department of Planning in March 2010.

3.9.2 Continuing consent requirements

DECCW noted: *"It is unclear if the Proposal was going to replace all previous planning approvals or work in conjunction with the original development consent (DA No. 31-02-99). The original development consent included conditions pertaining to environmental and other aspects of the original concept for Woodlawn…"*

Response

Veolia has an ongoing commitment to managing operations on site in accordance with the relevant environmental legislation. The Woodlawn Expansion Project seeks only to replace the original Woodlawn Bioreactor consent (DA-31-02-99) through the provision of a consolidated project approval. The existing requirements on site, such as those relating to whole of mine site rehabilitation, would not be compromised by this application, but rather consolidated into a new project approval for the Woodlawn Bioreactor.

The Woodlawn Bioreactor Environmental Management Plan (EMP) provides an environmental management tool for the operation of the site and a means of identifying and concentrating on the key environmental, operational and rehabilitation issues for the facility. The EMP would continue to operate, and be amended as required to account for Project changes.

3.9.3 Community consultation

A number of public submissions raised concerns in relation to the adequacy of the consultation process associated with the Project. In contrast, some members of the public expressed concern that the level of detail was too high for general consumption and that the general assertions contained in the Environmental Assessment did not facilitate for constructive public consultation.

It was suggested that an open forum should be held by Veolia in order to discuss the Project with the local residents and that an independent technical review of the EA should be arranged.

Response

A description of the consultation that was undertaken for the Project was included in Chapter 5 of the Environmental Assessment. In 2004 Veolia established the Woodlawn Bioreactor Community Liaison Committee (CLC). Local community representatives were identified through the CLC for consultation and engagement with prior to submission of the Environmental Assessment. A Project Fact Sheet entitled "Woodlawn Consent Modification" was also circulated within the Tarago district that explained the planning process and encouraged community comments.

Although Veolia met the consultation requirements for the Environmental Assessment, Veolia has a commitment to ongoing consultation with the local community. In response to community feedback, Veolia has sought to develop a more active and open dialogue with the local community. This process included developing a local community submissions register which was used to attempt to make, contact via telephone with all individual parties who lodged a submission to the Project to discuss their concerns directly. A review of the existing local community communication strategy has resulted in the introduction of a SMS and email notification subscription and the development of a dedicated website for Woodlawn locals to keep up to date with the key issues regarding the Woodlawn Bioreactor operations, including the status of this application. Other initiatives include more frequent CLC meetings and a more active involvement in other existing local community committees such as the Tarago and Districts Progress Association.

Veolia has also committed to establishing a website, and an electronic notification services for registered users. The website address will be www.veoliaes.com.au/woodlawn. This website will include community updates regarding the operations at Woodlawn. It will also provide an opportunity for the community to subscribe to a SMS and email notification service that Veolia will use to issue community updates and inform the community of any operational changes. This commitment has been included as an additional management and mitigation measure in the revised Statement of Commitments included in Chapter 6.

4.1 Introduction

This chapter describes additional assessments undertaken following exhibition of the Environmental Assessment. The scope and the reasons for undertaking each of the additional assessments are described for each report. This chapter also discusses any additional management or mitigation measure that has resulted from the additional investigation. The following additional assessments were undertaken:

- Revised Odour and Dust Impact Assessment (SLR Consulting Pty Ltd, 2011);
- Resource Recovery Response (Veolia, 2011);
- Water Quality Report – Response to Submissions (URS, 2011); and
- Supplementary Traffic Impact Assessment (URS, 2011).

4.2 Revised Odour and Dust Impact Assessment

4.2.1 Summary

The Revised Odour and Dust Impact Assessment (ODIA) addresses issues raised by the Department of Environment, Climate Change and Water (DECCW) in their response to the Environmental Assessment regarding dust and odour (including remodelling to include additional inputs), as well as comments received by the local community regarding recent odour experiences.

Predicted impacts of the Woodlawn Expansion Project have been compared to the relevant DECCW criteria, which are designed to minimise both health (particulate matter) and nuisance (odour and dust) impacts from the Project.

Additional odour monitoring was undertaken in January 2011 in wet weather conditions. Based on operational and community experience, these conditions are likely to represent a worst case scenario. The new odour emission rate data was used to remodel the potential impacts of the current operations as well as the proposed tonnage increase under worst case conditions.

The Revised ODIA also provides a summary of the range of waste management and odour control measures that have been trialled since the commencement of operations. These measures include, but are not limited to, the trialling of a range of alternate waste cover systems and the management of leachate in temporary storage ponds.

The results of the odour modelling predicted that the ground-level odour concentrations at the surrounding sensitive receptor locations ranged from 0.5 OU to 3.4 OU and therefore the predicted odour concentrations were below the Project specific odour performance goal of 6 OU.

Further analysis of potential odour impacts in the local community included consideration of the Tarago Village as a potentially sensitive receptor, as well as discussion regarding likely maximum odour concentrations, in addition to the odour criterion required to be assessed by DECCW.

The Revised ODIA also found that particulate matter emissions associated with the proposed Woodlawn Expansion Project were not predicted to result in exceedances of the adopted criteria for the Project.

Chapter 4 Additional Assessment

4.2.2 Additional management and mitigation measures

No additional management and mitigation measures were proposed as a result of the Revised ODIA.

However, to demonstrate Veolia's ongoing commitment to managing odour related issues on site, Veolia has committed to providing an odour diary to interested local community members to assist in monitoring the occurrence of odour events and provide feedback to Veolia. This has been included in the additional management and mitigation measures in the revised Statement of Commitments in Chapter 6. An example odour diary is provided in the Revised ODIA.

4.3 Resource Recovery Response

4.3.1 Summary

The Resource Recovery Response (Response) considers the submissions received on the Environmental Assessment regarding resource recovery, and in particular the issues raised by the Department of Environment, Climate Change and Water (DECCW).

The Response provides a context regarding the current NSW waste avoidance and resource recovery policy, including a summary of the key policy document driving waste avoidance and resource recovery programs in NSW.

The primary purpose of the Response was to discuss the Woodlawn Expansion Project in the context of clause 123 of the *State Environmental Planning Policy (Infrastructure)* (Infrastructure SEPP). While Veolia has received legal advice to the contrary, for the purpose of the Response, it has been assumed that clause 123 of the Infrastructure SEPP does apply.

The Response shows that a suitable level of recovery of waste is achieved through the overall Woodlawn Bioreactor process and that the consent authority can be satisfied that the considerations set out in clause 123 of the Infrastructure SEPP have been adequately addressed.

Further, the Woodlawn Expansion Project is not expected to have a significant impact on the putrescible waste market on the basis that the demand exists for the development of additional residual waste facilities, with the exhausting of approved disposal capacity likely to be the most significant influencing market factor.

Woodlawn will continue to be only a part of the solution for Sydney's putrescible waste. As discussed in Section 4.2 of Appendix D, the findings of independent analyses, including the Wright Report and Richmond Report, were that beyond 2014 the market will operate freely due to the cross over between landfill and AWT gate rates, enabling annual input caps for individual facilities to be phased out altogether. This is reflected by the potential timing for the increase in the total annual input rate at the Woodlawn Bioreactor provided in the Response.

4.3.2 Additional management and mitigation measures

No additional management and mitigation measures were proposed as a result of the Resource Recovery Response.

4.4 Water Quality Report – Response to Submissions

4.4.1 Summary

A Water Quality Report has been prepared in response to the submissions raised by The NSW Office of Water (NOW) and Sydney Catchment Authority (SCA) in relation to groundwater, surface water and leachate management associated with the Project. The issues relate to the potential for the proposed expansion to adversely impact on water quality.

A SEEP model was set up to evaluate the time for the leachate level in the bioreactor to rebound to the levels in the bedrock surrounding the bioreactor following closure of the facility. The modelling results suggest that complete rebound of the leachate level would take between 600 and 700 years after the bioreactor is capped. After 1,000 years a leachate mound of approximately 8 m is predicted by the SEEP model.

A revised concept plan for the final landform is included in the Water Quality Report and shows that the final contours are consistent with the Environmental Guidelines: Solid Waste Landfills (NSW EPA, 1996) regarding minimum falls. This plan also shows that the maximum final post-settlement surface level of the cap is approximately 865 mAHD, with post-settlement slopes less than 20% and greater than 5% across the whole surface. The plan also details that the final landform will join back into the existing levels around the rim of the void.

Further information is also provided regarding groundwater dewatering activities on site, including details of the existing dewatering locations, and hydrographs for some of the existing groundwater bores. Groundwater monitoring results show a declining trend in groundwater levels over time, however, the average extraction rate over the 3 years of monitoring between 2007 and 2009 is 0.9 L/sec, which corresponds to 28.7 ML/year.

The stormwater collection system at the Crisps Creek Intermodal Facility has been designed to collect all stormwater runoff from the hardstand areas via an open channel system on the perimeter of the area. The Water Quality Report found waste transported from local councils will pose no further impacts on local roads beyond that which may occur currently, as any additional road movements anticipated are well within the current design capacity of the roads to deal with potential impacts. Furthermore, local waste trucks will also be covered to minimise the potential for waste contamination.

The Water Quality Report concluded that there would be no adverse impact on water quality as a result of the Project.

4.4.2 Additional management and mitigation measures

No additional management and mitigation measures were proposed as a result of the Water Quality Report.

4.5 Supplementary Traffic Impact Assessment

4.5.1 Summary

A Supplementary Traffic Impact Assessment (TIA) was prepared following exhibition of the Environmental Assessment. The Supplementary TIA incorporates the response to some of the comments received from the public submissions, as well as those raised by Palerang Council.

Chapter 4 Additional Assessment

The Supplementary TIA describes the existing transport conditions, including all approved traffic movements surrounding the Bioreactor and considers the potential impact of the proposed traffic movements for the Woodlawn Expansion Project for road and rail operations.

The number of daily truck movements in Table 3-2 of the Supplementary TIA was revised down from 4(8) to 2(4). This was a typographic error in the original TIA regarding already approved traffic movements.

The Supplementary TIA includes consideration of alternative routes, and this consideration is summarised below:

- Future roads constructed in the area (e.g. MR92) will be considered upon their completion to become a route option if it is determined that they are suitable for truck movements, to reduce impact on local communities; and
- Collector Road west of the Bioreactor site entrance was analysed as a potential route option for vehicles from the west, however given the current state of the road and the extent of upgrades required, it is not considered to be a feasible option.

The Supplementary TIA also addresses safety concerns raised by a number of submissions. The roads surrounding the Bioreactor site are located in rural areas and some existing road safety issues for motorists are identified given the horizontal and vertical geometry of some sections and/or existing road surface condition. Veolia acknowledges these safety concerns and together with the community will advocate for road improvements in the region.

4.5.2 Additional management and mitigation measures

Two additional management and mitigation measures were proposed in the Supplementary TIA and are included in the revised Statement of Commitments included in Chapter 6**.** The new traffic and transport infrastructure management and mitigation measures are that Veolia would update the Code of Conduct for additional regional waste movements, and would also work with the local community to advocate for local road improvements with the relevant road authorities in addressing existing road safety concerns.

Chapter 5 Changes to the Project

The additional investigations undertaken, as well as the responses provided to submissions received by government agencies, members of the public and stakeholder groups did not result in any changes to the Project.

The findings of the additional investigations indicate that there are no significant adverse environmental impacts associated within the Project, assuming the inclusion of appropriate environmental management measures into the Project which would minimise adverse impacts on the environment.

The proposed adoption of the relevant measures identified in the Statement of Commitments into the suite of Veolia's existing environmental management plans (EMP) would be an important component of the Project and reiterates the commitment of Veolia and its contractors to mitigation of environmental impacts in the Environmental Assessment.

The Statement of Commitments has been revised to include additional measures to address concerns raised in submissions to the Environmental Assessment regarding traffic, community consultation and odour. This is discussed in Chapter 6. It is considered that this is sufficient to adequately address the issues raised and ensure that there is no adverse environmental impact from the Project.

It is considered that all the issues that were raised have been suitably addressed. Accordingly, no Project changes were required. Additional information was provided by Veolia to clarify the potential annual input rates as part of the Resource Recovery Response, as detailed in Table 6 of Appendix D.

6.1 Introduction

This chapter details the revised Statement of Commitments in accordance with clause 75F(6) of the EP&A Act. The inclusion of appropriate environmental management measures into the Project would minimise adverse impacts on the environment. The proposed adoption of the relevant measures identified in the revised draft Statement of Commitments into the suite of Veolia's existing environmental management plans would be an important component of the proposal and reiterates the commitment of Veolia and its contractors to mitigation of environmental impacts identified in this assessment.

Veolia operates both the Bioreactor and the Crisps Creek IMF strictly in accordance with existing approvals issued by the Department of Planning, as well as EPLs issued by DECCW. Chapter 6 of the original Environmental Assessment provides an overview of the existing environmental management provisions that are in place for both the Bioreactor and the Crisps Creek IMF.

As outlined earlier, Veolia is not proposing any significant operational, process, construction, or management changes to the Bioreactor or the Crisps Creek IMF as part of the proposed expansion Project. Consequently, it is considered that the existing suite of environmental management tools used by Veolia to manage its existing operations at both the Bioreactor and the Crisps Creek IMF would continue to be rigorously implemented and would be amended in accordance with any approval to increase the maximum input rate for the Bioreactor to 1.13 million tpa and the maximum throughput rate for the Crisps Creek IMF to 1.18 million tpa.

6.2 Statement of Commitments

The adoption of the mitigation measures discussed in **Chapters 8 - 15** of the original Environmental Assessment, and as amended by this report, is an important component of the project and reiterates Veolia's commitment to mitigation and management of the potential environmental impacts as a result of the Project.

The original draft Statement of Commitments has been amended to address concerns raised in submissions to the Environmental Assessment regarding traffic and transport infrastructure, community consultation and odour. Two additional mitigation measures regarding traffic and transport infrastructure, as well as an additional mitigation measure for both community consultation and odour have been included in Table 6-1, and are outlined below.

A new mitigation measure was recommended to update the Code of Conduct for additional regional waste movements. Additionally, Veolia has committed to working with the local community to advocate for local road improvements with the relevant road authorities in addressing existing road safety concerns

Veolia will continue to work with the local community to further improve waste management measures at the facility and relating operational updates as a function of the Woodlawn Community Liaison Committee. Veolia has committed to providing odour diaries to interested local community members to assist in monitoring the occurrence of odour events on the site.

Chapter 6 Revised Statement of Commitments

Veolia has also committed to establishing a website, and an electronic notification services for registered users. The website address will be www.veoliaes.com.au/woodlawn. This website will include community updates regarding the operations at Woodlawn. It will also provide an opportunity for the community to subscribe to an SMS and email notification service which Veolia will use to issue community updates and inform the community of any operational changes.

Table 6-1 below summarises the safeguard measures as a revised Statement of Commitments. These will be incorporated into existing operational and management procedures on site should approval be granted.

Table 6-1 Statement of Commitments

Mitigation Measure	Implementation - Operation
General Operation and Maintenance	
Ongoing Environmental Management	
The existing Environmental Management Plan for Bioreactor and the Crisps Creek IMF, including the suite of supporting documents, will continue to be the primary tools in relation to Veolia's ongoing environmental management for all operations. Where required, these management plans will be amended to take into account the provisions of the approval to increase the maximum input rate for the Bioreactor to 1.13 million tpa and the maximum throughput rate for the Crisps Creek IMF to 1.18 million tpa.	✓
Nature of Waste	
The Bioreactor and the Crisps Creek IMF will only receive General Solid Waste (putrescible) as defined by DECCW.	✓
Hours of operation	
Hours of operation for the Bioreactor and the Crisps Creek IMF are 6am to 10pm, Monday to Saturday and no work on Sundays, Good Friday or Christmas Day. Hours of operation may be varied with the written approval of DECCW.	✓
Community Engagement	
Veolia will continue to operate a 24 hour contact hotline for the duration of operations for both the Bioreactor and the Crisps Creek IMF.	✓
Veolia will continue to hold regular meetings with the Community Liaison Committee, so as to provide ongoing information to stakeholders and to resolve any operational issues that may arise from time to time.	✓
Establish additional electronic communication avenues for operational updates to the local community.	✓
Soils, Geology and Water	
Erosion	
Restrict traffic to defined site access roads where possible.	✓
Use a wheel wash to remove soil adhering to the wheels and undercarriage of trucks prior to departure from the landfill site.	✓
Install diversion drains and erosion and sediment control structures around the site to divert clean water from contaminated areas.	✓

Mitigation Measure	Implementation - Operation
Groundwater and Surface water	
Divert rainfall runoff from the sides of the pit before it comes in contact with the waste.	✓
Management of leachate in accordance with the Leachate Management Plan.	✓
Recirculate leachate on top of the waste, ensuring maximum evaporative discharge capacity.	✓
Dewatering of groundwater from the base of the pit in accordance with the Leachate Management Plan.	✓
Maintenance	
Routinely assess rainfall, evaporation, groundwater levels, piezometer levels, pond levels, pump hours, flow meters, surface water chemistry, groundwater chemistry.	✓
Clean any drains that have become blocked through sediment pollution.	✓
Check that drains are operating as intended.	✓
Check that rehabilitated lands have established sufficient groundcover to reduce the erosion hazard effectively and initiate repair as appropriate.	✓
Control emissions of dust from unsealed roads and other exposed surfaces by use of surface sealants and/or water spray carts or other appropriate equipment. Keep surfaces moist rather than wet.	✓
Keep all sediment detention systems in good, working condition.	✓
Dispose of any pollutants removed from sediment basins in areas where further pollution to downslope lands and waterways should not occur.	✓
Construct additional erosion and/or sediment control works as might become necessary to ensure the desired protection is given to downslope lands and waterways.	✓
Air Quality and Odour	
Odour control and Air Quality Management at the facility is to be carried out in accordance with the existing Ambient Air Quality Management Plan (AAQMP).	✓
Veolia will maintain their established odour incident management system. Should any odour complaints be received, these would be recorded with the details of the location, time, odour character and duration. Details of subsequent corrective actions would be documented.	✓
Truck speed and movements on site is minimised to reduce wheel generated dust emissions.	✓
Traffic is restricted to designated sealed access roads within and around the site.	✓
Waste within the bioreactor is covered at days end.	✓
Water carts for dust suppression continue to be utilised as required.	✓
Existing monitoring and reporting requirements of the AAQMP will continue to operate.	✓
Provide odour diaries to local community members to assist in monitoring the occurrence of odour events on the site.	✓

Chapter 6 Revised Statement of Commitments

Mitigation Measure	Implementation - Operation
Traffic and Transport	
Update the Traffic Management Plan for the existing operation activities to include the increased hours of operation and increased haulage activities	✓
Assess pavement condition and provide financial contributions to Council for repair of haulage routes	✓
Update Code of Conduct for additional regional waste movements	✓
Veolia will work with the local community to advocate for local road improvements with the relevant road authorities in addressing existing road safety concerns	✓
PHA	
An assessment of the impact of the increase in methane capture rate on the existing plant. Hazard and Operability (HAZOP) study technique or other similar methodology may be required to assess the impact of the change on plant systems to ensure that the risks associated with the methane handling is reduced to As Low As Reasonably Practicable levels.	✓
A review of the safety-implications of the increased waste transfer on on-site populations and determine whether any further safety measures are required to maintain a low level of safety risk to on-site population	✓
Landform and Site Rehabilitation	
At the conclusion of operations at the Bioreactor, infrastructure will be removed and the site will be rehabilitated and replanted with pasture species as outlined in the existing Post Closure Landfill Rehabilitation Management Plan.	✓

References

Chapter 7

Department of Environment, Climate Change and Water – Environmental Criteria for Road Traffic Noise (ECTRN) (Accessed 21February 2011)

http://www.environment.nsw.gov.au/resources/noise/roadnoise.pdf

Environmental Planning & Assessment Act 1979 (Accessed 21 February 2011)

http://www.austlii.edu.au/au/legis/nsw/consol_act/epaaa1979389/

Goulburn Mulwaree - Development Control Plan 2009 (Accessed 21 February 2011)

http://www.goulburn.nsw.gov.au/files/17227/File/First_Amendment_October_09_DCP.pdf

Protection of the Environment Operations (Clean Air) Regulation 2010 Current version for 7 January 2011 to date (Accessed 21 February 2011)

http://www.legislation.nsw.gov.au/maintop/view/inforce/subordleg+428+2010+cd+0+N

STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007 - Made under the Environmental Planning and Assessment Act 1979 (Accessed 21 February 2011)

http://www.austlii.edu.au/au/legis/nsw/consol_reg/sepp2007541/

WATER ACT 1912 (Accessed 21 February 2011)

http://www.austlii.edu.au/au/legis/nsw/consol_act/wa191283/

Chapter 8 Limitations

URS Australia Pty Ltd (URS) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Veolia Environmental Services (Australia) Pty Ltd and only those third parties who have been authorised in writing by URS to rely on the report. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 10 December 2010.

The methodology adopted and sources of information used by URS are outlined in this report. URS has made no independent verification of this information beyond the agreed scope of works and URS assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to URS was false.

This report was prepared in March 2011 and is based on the conditions encountered and information reviewed at the time of preparation. URS disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.