NSW GOVERNMENT | Planning & Infrastructure

MAJOR PROJECT ASSESSMENT
Woodlawn Waste Expansion Project (MP 10_0012)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

December 2011

Cover photos: Crisps Creek Intermodal Facility and the Woodlawn Bioreactor void
Inside photo: A waste container being unloaded from a truck into the Woodlawn Bioreactor void

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EXECUTIVE SUMMARY

Veolia controls about 6,000 hectares of land at Woodlawn near Goulburn known as the Woodlawn Eco-Precinct (WEP, see Figures 1 & 2).

The WEP borders the local government areas (LGAs) of Palerang and Goulburn Mulwaree with land to the north-east falling within the Goulburn Mulwaree LGA and land to the south and west falling within the Palerang LGA.

Veolia has operated the Woodlawn Waste Management Facility (WWMF) on land within this precinct since September 2004.

The WWMF was approved by the former Minister following a Commission of Inquiry on 30 November 2000 (DA-31-02-99) and includes the Crisps Creek Intermodal Facility (Crisps Creek IMF) and the Woodlawn Bioreactor. The consent limits operation of the project to 20 years.

The Crisps Creek IMF is a dedicated intermodal facility which accepts containerised waste by rail from Sydney's Clyde Transfer Terminal (also operated by Veolia) for transportation to the Bioreactor by road for landfilling. The current approved throughput of the Crisps Creek IMF is 780,000 tpa.

The Bioreactor is a major putrescible landfill that principally services the Sydney region and is located within the void of the former Woodlawn Mine.

Under the Minister's consent:

- Veolia has approval to landfill up to 500,000 tonnes per annum (tpa) of putrescible waste (with the approval of the Minister) at the Bioreactor;
- 'Caps' were placed on the consent at the time in an effort to increase diversion rates away from landfill and drive investment into Alternative Waste Technologies (AWTs). The implementation of these 'caps' predated the NSW Waste and Environment Levy which is now the primary mechanism for driving investment in AWTs in NSW; and
- The caps have had to be lifted temporarily in recent years due to a shortage of annual landfill capacity.

Veolia is now seeking approval to increase the throughput rate of waste at the Bioreactor to 1.13 million tpa. Simultaneously, Veolia are proposing to increase the volume of waste received at the Crisps Creek IMF to 1.18 million tpa.

It should be noted that no increase to the capacity of the Clyde Transfer Terminal is proposed as part of this application. That is, should Veolia gain approval to increase waste throughput at Woodlawn and Crisps Creek, Veolia would need to secure additional transfer (train/intermodal) capacity in the Sydney basin.

The Project does include extending the hours of operation at both the landfill and the Crisps Creek intermodal sites and provision of additional equipment, personnel and associated infrastructure.

The Project would employ approximately 11 additional people and have a capital investment value (CIV) of $2.4 million.

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011, continues to apply to transitional Part 3A Projects. The Project is a transitional Part 3A Project under the EP&A Act, and consequently requires the Minister's approval.

However, as reportable political donations were made by Veolia and more than 25 submissions were received by way of objection on the Project, the application is to be determined by the Planning Assessment Commission in accordance with the Minister's Instrument of Delegation, dated 14 September 2011.

The Department exhibited the Environmental Assessment (EA) of the Project from Thursday 23 September 2010 until Monday 25 October 2010, and received 46 submissions on the Project: 8 from government agencies and 38 from the general public and special interest groups.

The majority of submissions from members of the public and special interest groups including WSN, SITA, the NSW Farmers Association and Tarago and District Progress Association Inc objected to the proposal, while others raised issues of concern.

Objecting submissions raised concerns mainly in relation to traffic and transport, traffic safety, odour, noise, pest/vermin control, water quality impacts, the need for infrastructure contributions and that the Project is inconsistent with key government policy on waste diversion.

The Department has assessed the merits of the Project in accordance with the requirements of the EP&A Act and found that:

- Sydney needs more physical landfill capacity to manage its waste into the future, and the project provides for some of this capacity;
- there is a demonstrable need for greater annual capacity at Woodlawn to deal with both the current and predicted waste disposal demand. This conclusion is further supported by the fact that:
    - The caps are artificially restricting landfill capacity, and being lifted adhoc (on an emergency basis), because there is no suitable alternatives to landfilling;
    - resource recovery initiatives (AWTs) have not developed as swiftly or been as effective as initially expected for a variety of reasons; and
    - The number of existing landfills in the Sydney waste network is running out of total capacity.
- The Project (if approved) is unlikely to adversely impact on AWT gate prices or the scope for future resource recovery in NSW, particularly given there a number of competition and infrastructure issues that need to navigated by Veolia before additional waste could flow into the Bioreactor;
- The caps are generally ineffective, conversely the Environment Levy is a far more efficient tool at driving the desired changes toward increased resource recovery in the waste sector, therefore the caps should be dispensed with immediately;
- There is a suitable level of resource recovery for the project, particularly when taking a broader view of both Veolia's resource recovery initiatives, their client's efforts (Councils) in diversion and the gas capture / electricity generation that is already occurring at the site;
- There is justification for accepting additional waste from surrounding Councils, in limited circumstances;
- Road, transport and traffic issues are acceptable, with the imposition of suitable conditions of approval; and
- While the Project is predicted to comply with relevant odour objectives, there is scope for further reducing the odour impacts of the facility by implementing best management practices, as such recommended conditions require an independent audit into odour sources along with implementation of key recommendations.

Overall, the assessment has found that:

- The 1.13 million tpa capacity being sought is acceptable from an environmental perspective;
- The Project would assist in meeting the need for putrescible waste disposal capacity for Sydney's waste; and
- The project (the Woodlawn Bioreactor) is a critical piece of waste infrastructure to ensure Sydney's landfill security into the future.

Further, the Department has found that the Project has additional public benefits including rehabilitation of a degraded mine site, greenhouse gas capture and electricity generation. The Department considers the public benefits of the Project outway any potential impacts.

Consequently, the Department considers that the Woodlawn Expansion Project is in the public interest and should be approved, subject to conditions.

BACKGROUND

1.1 Relevant Operations and Approvals

Veolia controls about 6,000 hectares of land at Woodlawn near Goulburn known as the Woodlawn Eco-Precinct (WEP, see Figures 1 & 2).

The WEP borders the local government areas (LGAs) of Palerang and Goulburn-Mulwaree with land to the north-east falling within the Goulburn-Mulwaree LGA and land to the south and west falling within the Palerang LGA.

Veolia has operated the Woodlawn Waste Management Facility (WWMF) on land within this precinct since September 2004.

The WWMF was approved by the former Minister following a Commission of Inquiry on 30 November 2000 (DA-31-02-99) and includes the Crisps Creek Intermodal Facility (Crisps Creek IMF) and the Woodlawn Bioreactor (the Bioreactor, see Figures 1 & 2). The consent is limited to 20 years.

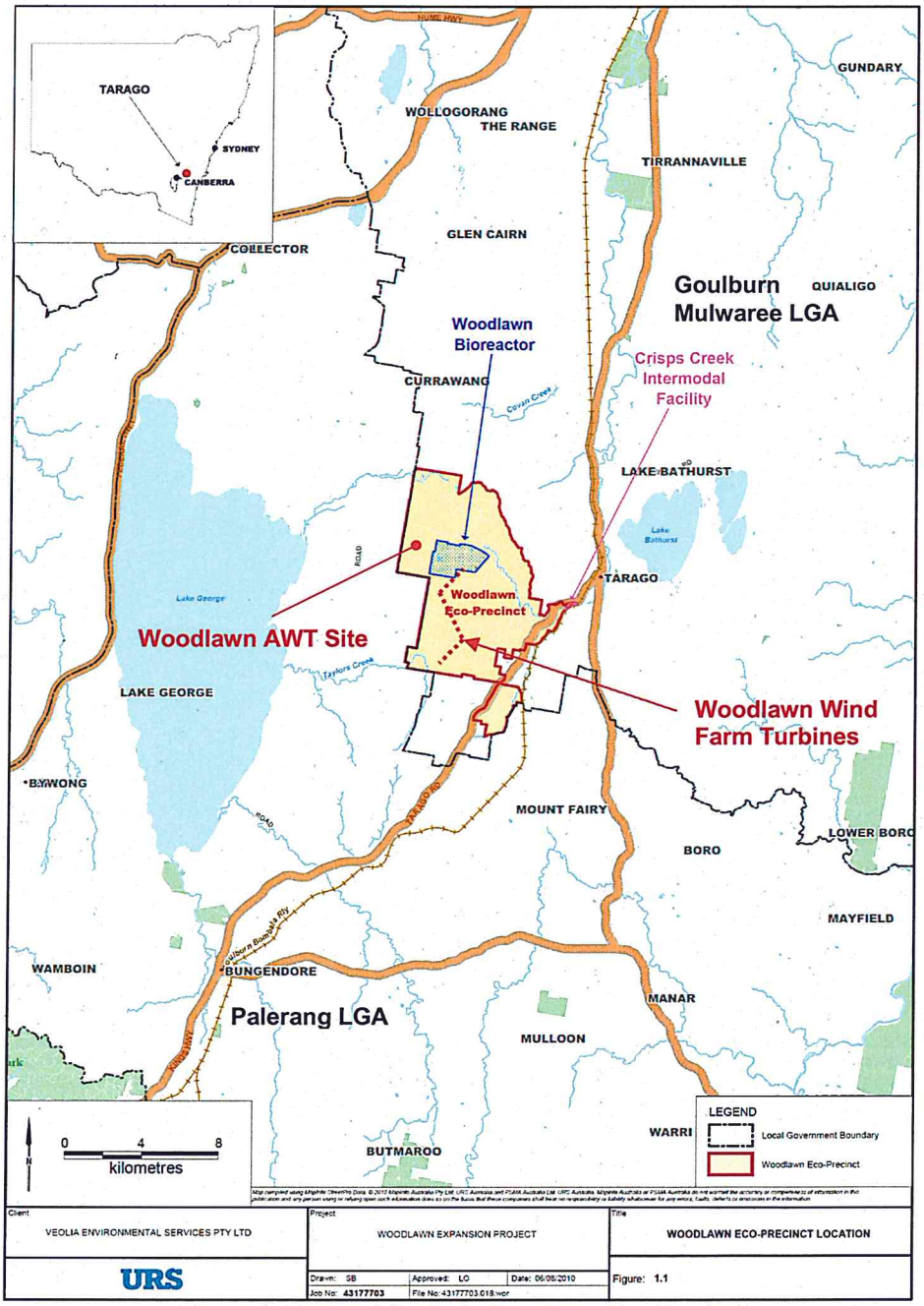

Figure 1: *Regional Context - Woodlawn Eco-Precinct*

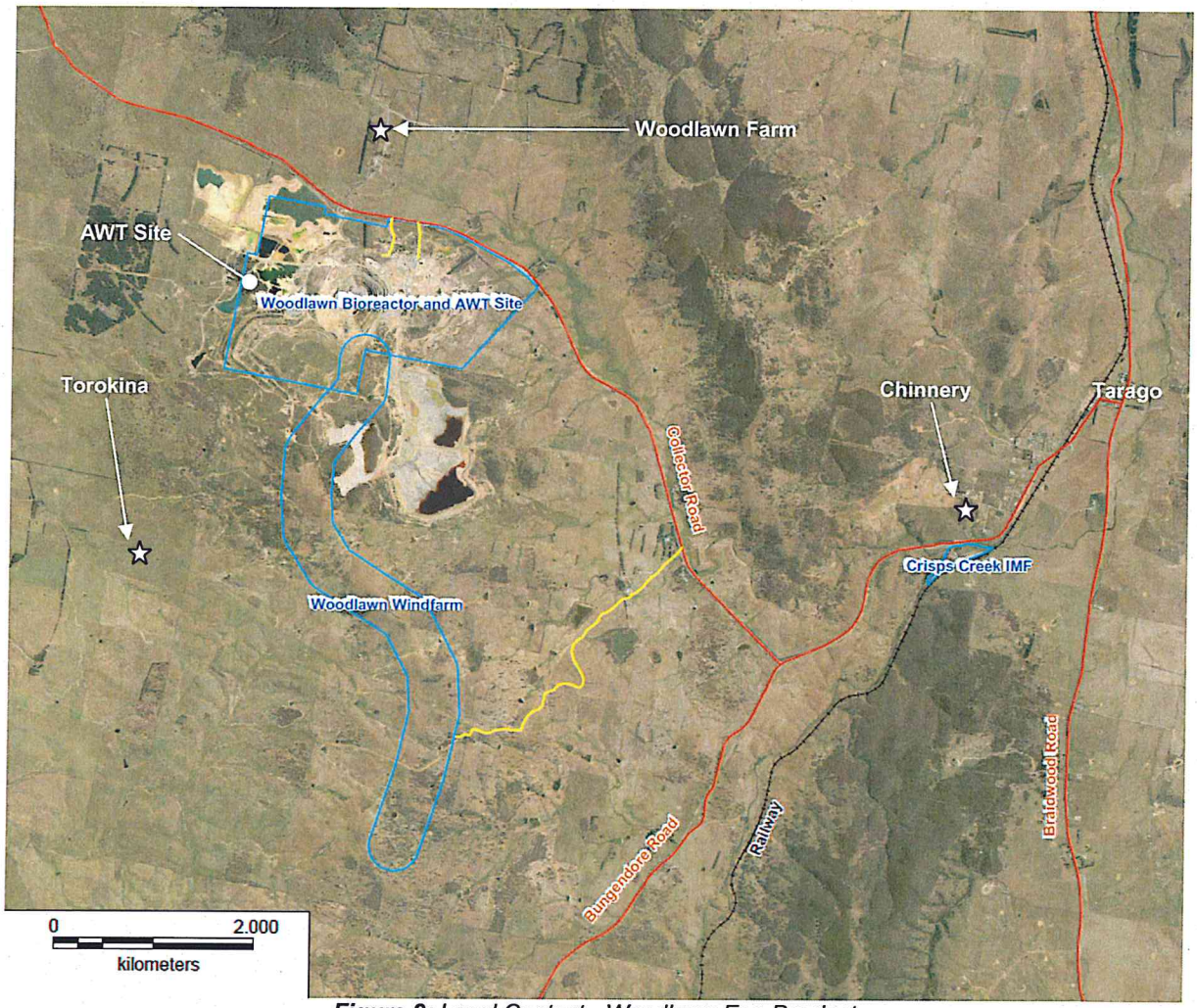

Figure 2: *Local Context - Woodlawn Eco-Precinct*

1.2 Other Approvals and Projects

A number of other Projects have been approved in the WEP including the Woodlawn Wind Farm and the Woodlawn AWT.

The Woodlawn Wind Farm (owned by Infigen, DA-250-10-2004-i) was approved by the then Minister for Planning in October 2005, and includes 20 wind turbines for energy generation. The closest wind turbine is located approximately 300m south of the Bioreactor (see Figures 1 & 2).

The Woodlawn AWT (owned by Veolia, MP 06_0239) was approved by the then Minister for Planning in November 2007 and is designed to receive up to 280,000 tpa of waste for recovery and processing.

Construction of the Woodlawn AWT has not yet commenced.

The Woodlawn AWT will be located approximately 1.2km north-west of the Bioreactor (see Figures 1 & 2).

1.3 The Crisps Creek IMF

The Crisps Creek IMF is a dedicated waste transfer facility which accepts containerised waste by rail from Sydney's Clyde Transfer Terminal for transportation to the Bioreactor by road for landfilling (see Figures 2, 3 & 4). Veolia has approval to unload 2 trains a day but generally only 1 is unloaded under current operating conditions.

The Crisps Creek IMF has Ministerial approval to receive up to 780,000 tpa of waste, including up to 500,000 for disposal in the Bioreactor, and 280,000 for recovery and processing in the AWT.

Under this approval, waste from Sydney's Clyde Transfer Terminal (also operated by Veolia) is packed into shipping containers, put onto a train adjoining Clyde marshalling Yards, and sent to the

Crisps Creek IMF. The containers of waste are then lifted from the train onto trucks (see Figure 3) and transported via Bungendore and Collector Roads about 6 kilometres (km) to the landfill site. The waste is then tipped from the containers into the landfill void (see Figures 5 & 6).

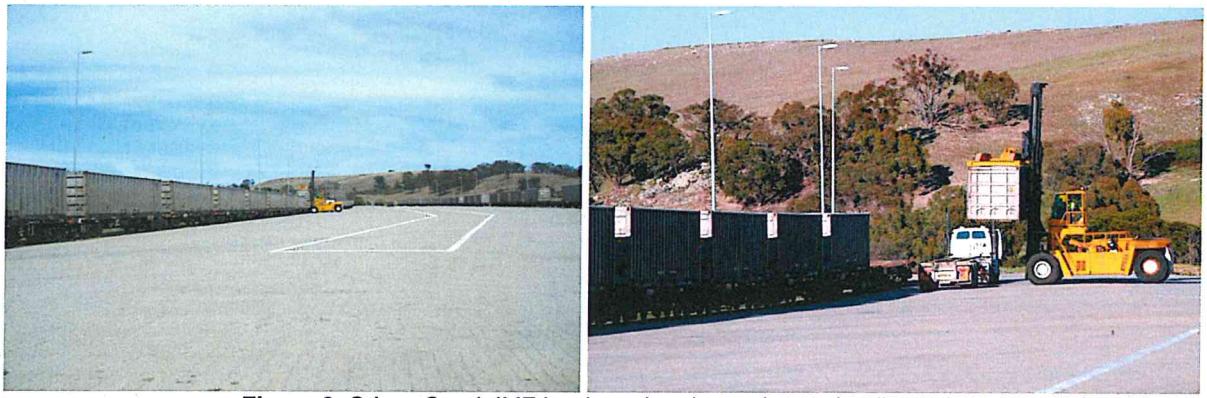

***Figure 3**: Crisps Creek IMF hardstand and container unloading area*

Crisps Creek IMF - Site Location

The Crisps Creek IMF is located approximately 8km to the east of the Woodlawn Bioreactor, and approximately 2km south of Tarago (see Figure 2), and has a site area of approximately 10ha.

It is bound by the Mulwaree River to the north and west, while the Sydney to Canberra railway forms the boundary to the east and south. The region is generally characterised by agricultural activities, including cultivation of crops and livestock grazing operations which is reflected by the rural zoning of the site and surrounding properties.

The closest residential receptor to the Crisps Creek IMF is located approximately 680 metres (m) away on privately owned property named 'Chinnery' (see Figures 2 & 4).

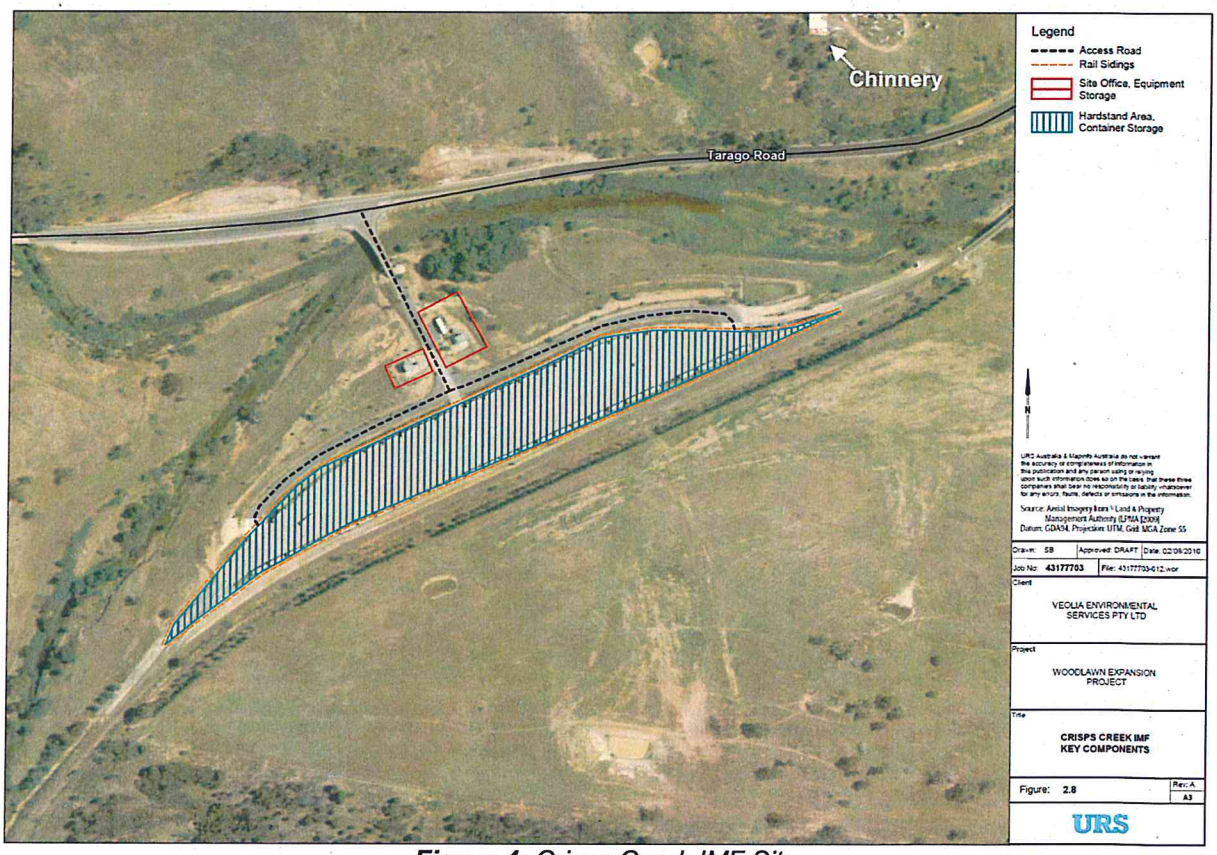

***Figure 4:** Crisps Creek IMF Site*

1.4 The Woodlawn Bioreactor

The Bioreactor is a solid putrescible waste landfill, using the void created by the former Woodlawn open-cut mine that ceased activities in 1998 (see Figures 5 & 6).

Bioreactor- Technology

The Bioreactor landfill (as opposed to a conventional landfill) has been designed to maximise the recovery of landfill gas. Optimal conditions for methane production are created through the controlled addition of moisture and recirculation of leachate. Methane is then extracted using a landfill gas extraction (LGE) system (a system of horizontal and vertical pipes) and converted to green electricity by landfill gas generators through a system of transformers. Electricity is then fed into an existing power grid on-site, and either used on-site or sold on the national electricity grid.

The Bioreactor has generated significant greenhouse gas savings when compared to other traditional landfill sites. Since commencement, the Bioreactor has abated 119,490 of CO_2 equivalent tonnes through flaring and electricity production.

Bioreactor- Design

The design of the Bioreactor allows for the gradual staging of landfill cells and lifts in response to monitoring and current best practice. Following initial site preparation works, landfill cells are lined with a waste liner, drainage material and graded towards a leachate sump to construct a basal leachate management system.

As the waste enters the bioreactor the waste surface increases in both height and area. Tipping occurs in lifts with waste being placed from one side of the Bioreactor to the other prior to starting the next lift. The conical shape of the void ensures that as waste enters the Bioreactor, the surface area and height of the waste gradually increases.

The Bioreactor has a total capacity of 25 million cubic metres, approximately 5 of which has been filled to date. Therefore, the Bioreactor has capacity for an additional 20 million cubic metres before it reaches its final landform. However, given the current consent limits operations to 20 years and input is capped, not all of this landfill capacity can be realized even if it is considered environmentally acceptable.

Bioreactor- Annual Input Limits

The annual environmental capacity of both the Bioreactor and Sydney's Clyde Transfer Terminal are limited to 500,000 tpa of waste. However, the consents for both sites are structured such that the allowable waste disposal rate at the site ratchets down progressively so that after the 15th year of operation only 290,000 tpa is permitted.

The conditions of consent for both facilities currently limits (or 'cap') the annual waste received and disposed to 360,000 tpa. These 'caps' were placed on the consent in an effort to increase diversion rates away from landfill and drive investment into Alternative Waste Technologies (AWTs). This issue is discussed further in section 5.1 of this report.

However, emergency waste tonnage conditions in both consents allow, on the basis of an independent assessment of landfill capacity and demand demonstrating a need for additional input, the Minister to increase these limits, up to 500,000 tonnes tpa.

In August 2010, the former Minister approved a modification to the development consent for the WWMF to allow the receipt of up to 50,000 tpa of waste at the Bioreactor by road from municipal councils surrounding the site including Goulburn-Mulwaree Council, Palerang Council, Queanbeyan Council and Bega Valley Shire Council. The receipt of regional waste at the Bioreactor remains within the maximum assessed input rate of 500,000 tpa.

Figure 5: *Woodlawn Bioreactor void and waste container tipping area*

Bioreactor - Site Location

The Bioreactor is located approximately 10km south west of the village of Tarago and approximately 40km south of Goulburn (see Figures 1, 2 & 6) off Collector Road. It is situated on top of a ridgeline forming part of the Great Dividing Range, with an elevation of approximately 800m.

The former Woodlawn mine void which now comprises of the Bioreactor site has an area of 39 hectares, with a depth of 200m and air space capacity of 25 million cubic metres. All sensitive receptors are located a considerable distance away from the Bioreactor with the closest property being 1.6km away at 'Woodland Farm' which is owned by Veolia (see Figures 2 & 6).

The nearest private residence to the Bioreactor is located approximately 3.7km away on a property called 'Torokina' (see Figures 2 & 6).

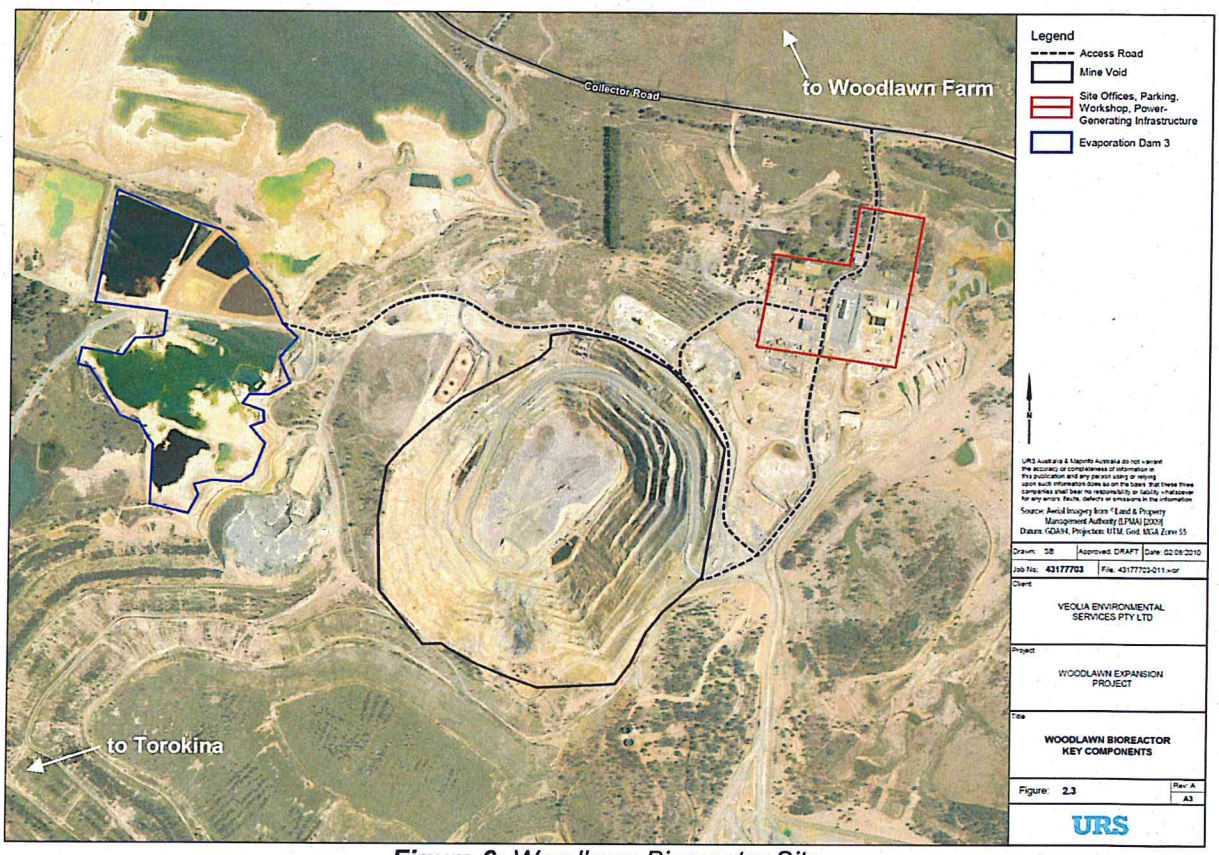

Figure 6: *Woodlawn Bioreactor Site*

Bioreactor - Environmental Performance and Regulation

Regular independent environmental audits undertaken at both the Woodlawn Bioreactor and Crisps Creek IMF sites on the whole confirm good environmental performance of these operations. These audits show that the majority of development consent conditions are being fully complied with, and where an issue has been identified (e.g. odour impacts), Veolia has worked with the relevant government agencies as well as the local community to rectify any performance issue.

Both the Bioreactor and Crisps Creek IMF also currently operate under Environmental Protection Licences (EPLs) issued by the Office of Environment and Heritage (Bioreactor, No. 11436 and Crisps Creek IMF, No. 11455).

2 PROPOSED PROJECT

2.1 Project Description

The Project is known as the Woodlawn Waste Expansion Project (the Project).

The major components of the Project are summarised in Table 1, and depicted in Figures 1, 2, 5 & 6. The Project is described in full in URS's Environmental Assessment (EA), which is attached as Appendix F.

Table 1: *Main Project Components*

Aspect	***Description***
Project Summary	The Woodlawn Waste Expansion Project, which includes increasing the volume of waste received at of the Woodlawn Bioreactor and Crisps Creek IMF, extending the hours of operation at both sites and provision of ancillary infrastructure.
Woodlawn Bioreactor	• Increasing the volume of waste received at the Woodlawn Bioreactor from 500,000 tonnes per annum to 1.13 million tpa; • Installation of additional lighting towers within the landfill and along the access road; and • Provision of additional equipment including a bulldozer, forklift, compactor and tipper.
Crisps Creek IMF	• Increasing the volume of waste received at the Crisps Creek Intermodal from 780,000 tonnes per annum to 1.18 million tpa.
Hours of Operation	• Monday to Saturday – 6.00am – 10.00pm • Sundays and Public Holidays - No work permitted
Capital Investment Value	• $2.4 million
Employment	• 11 additional full-time equivalent jobs (spread over both sites)
Construction	• No significant construction activities

A summary of the approved operations and changes being sought by Veolia as part of the Project is provided in Table 2 below.

Table 2: *Proposed Changes*

Site	***Existing Approved Operations***	***Proposed Operations***
Woodlawn Bioreactor		
Maximum Throughput	• 500,000 tpa of General Solid Waste (putrescible)	• 1.13 million tpa of General Solid Waste (putrescible)
Hours of Operation	• Monday to Saturday – 6.00am – 7.00pm • Sundays and Public Holidays - No work permitted	• Monday to Saturday – 6.00am – 10.00pm • Sundays and Public Holidays - No work permitted
Physical Works	As per existing consent	No change
Employment	20 (including Crisps Creek IMF)	31 (including Crisps Creek IMF)
Equipment	As per existing consent	1 extra forklift, bulldozer, compactor, tipper and mobile lighting towers
Crisps Creek IMF		
Maximum Throughput	• 780,000 tpa	• 1.18 million tpa
Hours of Operation	• Monday to Saturday – 6.00am – 7.00pm (normal operations) • Monday to Saturday – 6.00am – 6.00pm (train movements) • Sundays and Public Holidays - No work permitted	• Monday to Saturday – 6.00am – 10.00pm (normal operations and train movements) • Sundays and Public Holidays - No work permitted
Physical Works	As per existing consent	No change
Equipment	As per existing consent	No change
Total Development Area	As per existing consents	No change

A breakdown of the source of waste (existing approved and proposed) to be received at each site is summarised in Tables 3 & 4 below.

Table 3: *Existing and proposed waste receipt by source at the Bioreactor*

Existing Approved (tpa)		***Proposed (tpa)***	
400,000 (currently capped at 360,000) from Sydney by rail		900,000 from Sydney by rail	
50,000 from regional areas by road (MOD 1)*		130,000 from regional areas by road	
100,000 residual waste from approved AWT*		100,000 residual waste from approved AWT	
Maximum Annual Input Limit	**500,000 tpa**	***Maximum Proposed Annual Limit***	**1.13 million tpa**

**input must be included under the maximum assessed annual input limit of 500,000 tpa of waste*

Table 4: *Existing and proposed waste receipt by source at the IMF*

Existing Approved (tpa)		***Proposed (tpa)***	
500,000 from Sydney by rail		900,000 from Sydney by rail	
280,000 for processing at approved AWT		280,000 for processing at approved AWT	
Maximum Assessed Annual Limit	**780,000 tpa**	***Maximum Proposed Annual Limit***	**1.18 million tpa**

A schematic representation of the existing and proposed waste quantities, sources and destinations is also illustrated in Figure 7 below.

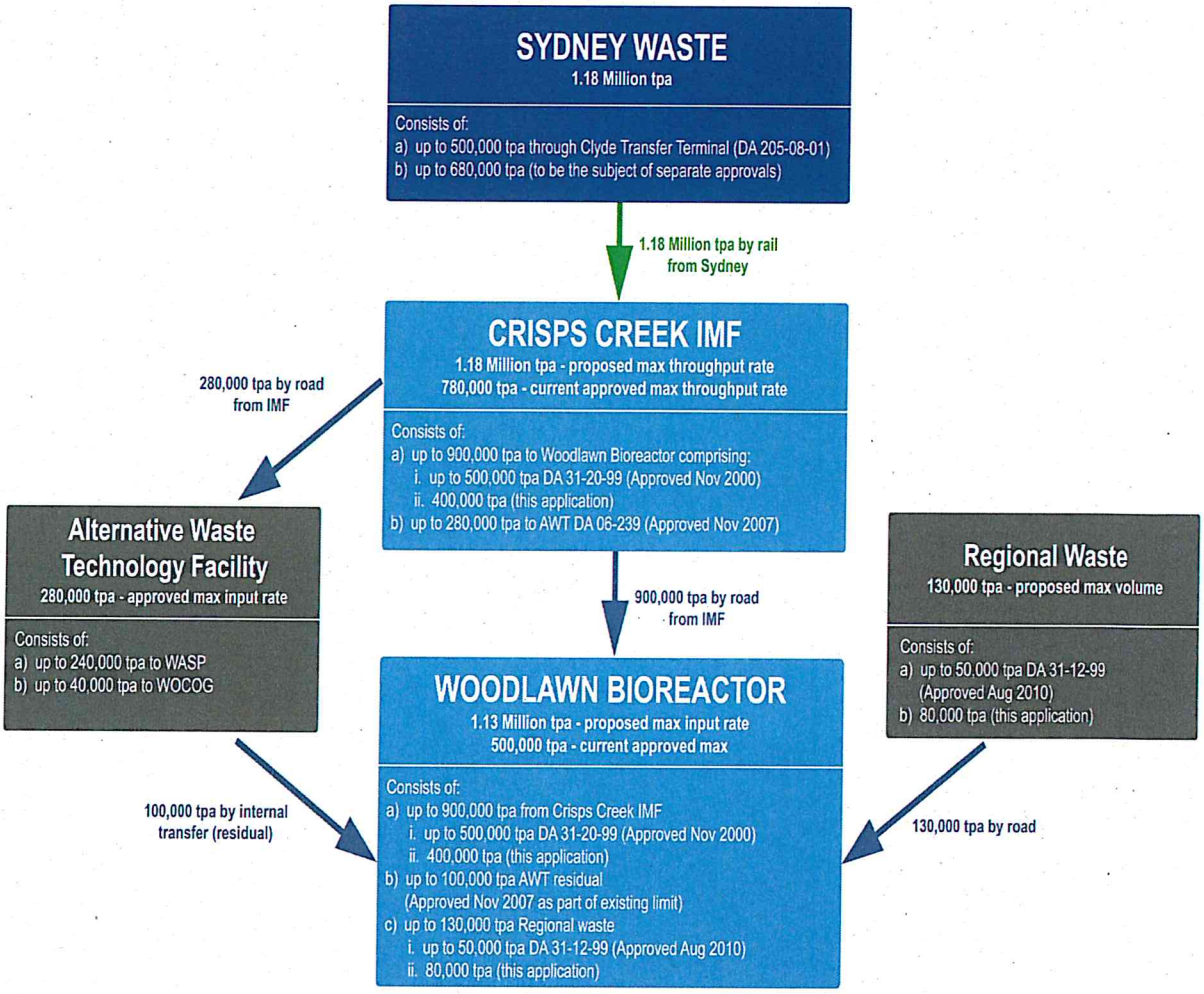

Figure 7: *Schematic representation of existing approved and proposed waste flows*

3 STATUTORY CONTEXT

3.1 Major Project

The proposal is classified as a major Project under the now repealed Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act), as it includes development for the purpose of a regional putrescible landfill that has the capacity to receive over 650,000 tonnes of putrescible waste over the life of the Project.

3.2 Continuing Operation of Part 3A

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the Act, continues to apply to transitional Part 3A Projects. Director-General's environmental assessment requirements (DGRs) were issued in respect of this Project prior to 1 October 2011, and the Project is therefore a transitional Part 3A Project.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or his delegate) may approve or disapprove of the carrying out of the Project under section 75J of the Act.

3.3 Approval Authority

Under the EP&A Act the Minister is the approval authority for Part 3A Projects. However, as reportable political donations were made by Veolia which is a private company and more than 25 submissions were received by way of objection on the Project, the application will be determined by the Planning Assessment Commission in accordance with the Minister's Instrument of Delegation, dated 14 September 2011.

3.4 Integrated Approvals

Under Section 75V of the EP&A Act, a number of further approvals are required to be obtained, but must be approved in a manner that is consistent with any Part 3A approval for the Project.

In this case, the Project requires:

- variations to the existing Environmental Protection Licenses (EPLs) held for both the Woodlawn Bioreactor (No. 11455) and Crisps Creek IMF sites (No. 11436) under the *Protection of the Environment Operations Act 1997;* and
- a consent under section 138 of the *Roads Act 1997* (Roads Act).

The Department has consulted with the Office of Environment and Heritage (OEH), both Councils and Roads and Maritime Services (RMS) and considered the relevant issues relating to EPL variations and issuing of consent under section 138 of the Roads Act in the assessment of the Project (see Section 5 of this report).

3.5 Permissibility

The majority of the existing Woodlawn Bioreactor site is zoned IN3 Heavy Industrial under the *Goulburn Mulwaree Local Environmental Plan 2009* and a small portion of the site is zoned General Rural under the *Mulwaree Local Environmental Plan 1995.* The Project is permissible with development consent in these zones as a waste disposal facility.

The Crisps Creek Intermodal Facility is zoned RU2 Rural Landscape under the *Goulburn Mulwaree Local Environmental Plan 2009*, and is permissible with development consent in this zone as a waste or resource transfer station.

In addition, the proposal is permissible with consent under Division 23 of the *State Environmental Planning Policy (Infrastructure) 2007* (the Infrastructure SEPP), as a waste or resource recovery facility that is located within an equivalent or prescribed zone.

3.6 Exhibition and Notification

Under Section 75(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) of a Project publicly available for at least 30 days.

After accepting the EA for the Project, the Department:

- made it publicly available from Thursday 23 September 2010 until Monday 25 October 2010;

- on the Department's website;
- at the Department's Information Centre;
- at the Nature Conservation Council's Sydney office;
- Goulburn Mulwaree Council administrative office; and
- Palerang Council administrative office (Bungendore Office).

- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities, Goulburn Mulwaree and Palerang Council by letter; and
- advertised the exhibition in the Bungendore Mirror, the Braidwood Times, the District Bulletin (Palerang) and the Goulburn Post.

This satisfies the requirements in Section 75H (3) of the EP&A Act.

During the assessment process, the Department also made a number of documents available for download on the Department's website. These documents included the:
- Project application;
- Director-General's environmental assessment requirements;
- EA;
- submissions received; and
- Veolia's response to those submissions (RTS).

3.7 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director General's report is required to include a copy of, or reference to, the provisions of environmental planning instruments that substantially govern the carrying out of the Project.

The Department has considered the Project against the relevant provisions of several key environmental planning instruments including:
- *State Environmental Planning Policy (Major Development) 2005;*
- *State Environmental Planning Policy (Infrastructure) 2007;*
- *State Environmental Planning Policy (Rural Lands) 2008;*
- *State Environmental Planning Policy No. 33- Hazardous and Offensive Development;*
- *State Environmental Planning Policy No. 55 - Remediation of Land;*
- *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011;*
- *Sydney Canberra Corridor Regional Strategy;*
- *Goulburn Mulwaree Local Environmental Plan 2009; and*
- *Mulwaree Local Environmental Plan 1995.*

The Department is satisfied that, subject to the implementation of the recommended conditions of approval, the Project is generally consistent with the aims and objectives of these instruments (see consideration of these instruments Appendix C).

3.8 Objects of the Environmental Planning and Assessment Act 1979

In determining the application, the Minister should consider whether the Project is consistent with the relevant objects of the EP&A Act.

The Department has fully considered the objects of the EP&A Act, including the encouragement of Ecologically Sustainable Development (ESD), in its assessment of the application. The Department considers that objects (ii), (iv), (vi) and (vii) are relevant to the merit assessment of this application.

The Department considers that the Project represents the orderly and economic use of the land (i.e. rehabilitation of an old mine site via landfill) for the social and economic welfare of the regional and state community. In particular, the project responds to the critical need to ensure Sydney's landfill capacity is secured into the future. Further, the Department considers that thorough an emphasis on avoidance of impacts, careful design, management and mitigation measures, the Project would not impact on any important ecological areas, threatened ecological species or communities and is consistent with the principles of ESD.

3.9 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the Project.

The Department is satisfied that the environmental assessment requirements have been complied with.

4 ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received a total of 46 submissions on the Project:

- 8 from public authorities including Palerang Council, Goulburn Mulwaree Council, Roads and Maritime Services (RMS), the NSW Office of Water (NOW), and the Office of Environment Heritage (OEH), Industry and Investment NSW (I&I NSW), the NSW Department of Education and Community (DETC) and the Sydney Catchment Authority (SCA);
- 5 from Interest Groups including WSN Environmental Services, Global Renewables, the NSW Farmers Association, Total Environment Centre (TEC) and Tarago and District Progress Association Inc (TADPAI); and
- 33 from the general public.

The Department also received 2 late submissions from the Australian Capital Territory's Department of Territory and Municipal Services (ACT DTMS) and SITA Australia (SITA), therefore taking the total number of submissions received on the Project to 48.

A summary of the issues raised in submissions is provided below. A full copy of these submissions is attached in Appendix E.

4.1 Public Authorities

OEH did not object to the Project, however raised concerns regarding;

- the potential for increased noise, air and odour emissions, requesting further studies be undertaken; and
- the need for further details on, and justification for, the proposed level of local resource recovery at the Bioreactor including measures to minimise waste placed in the landfill.

Goulburn Mulwaree Council did not object to the Project, however raised concerns regarding:

- the potential for increased odour, traffic and road safety, rehabilitation of the site, flooding, water contamination, leachate management, vermin and pest control; and
- the requirement for section 94 contributions and local infrastructure contributions to cover potential damage to local roads from increased truck movements.

Palerang Council did not object to the Project, however raised concerns regarding:

- regional waste haulage hours, increased traffic movements through Bungendore and subsequent road safety/amenity impacts;
- the need for road widening works on Bungendore/Tarago Road to address road safety concerns; and
- the requirement for section 94 contributions to maintain local roads damaged by increased truck movements.

RMS shared Palerang Council's road safety concerns agreeing that future upgrade works may be necessary on Bungendore/Tarago Road to mitigate shoulder damage and avoid dangerous driving on narrow road sections. In addition, in the late stages of assessment, RMS indicated that it may be necessary for Veolia to provide a climbing lane on the section of Bungendore/Tarago Road between the Crisps Creek IMF and the Bioreactor to address these concerns.

NOW support the Project, provided minor amendments are made to the proposed Leachate Management Plan and confirmation of the annual groundwater interception/extraction volumes post-determination.

SCA sought further information on leachate generation at full landfill capacity and the final landform. SCA also raised concerns regarding:

- the potential for leachate to contaminate soil and local water sources; and
- the need for further details on the potential water quality impacts of the Project on surface water at the Crisps Creek IMF.

DETC raised concerns regarding the potential for class disruptions at Tarago Public School from rail noise during school hours.

I&I NSW did not object to the proposal but raised some concern regarding rehabilitation obligations under the mining lease covering the site. I&I requested the Bioreactor be removed from the mining lease and that the Department should hold the guarantee for rehabilitation of the site.

ACT DTMS objected to the proposal on the basis that it would divert waste from recycling in the ACT in favour of disposal at the Bioreactor because it would be cheaper to do so.

4.2 Special Interest Groups

Global Renewables raised concerns regarding the levels of resource recovery at the Bioreactor particularly given the approved AWT at the site has not been constructed.

WSN raised concerns regarding the upstream impacts of the Project on waste throughput at the Veolia's Clyde Waste Transfer Terminal in Sydney and that the proposal is inconsistent with the Infrastructure SEPP (i.e. justified demand does not exist for the Project).

NSW Farmers Association objected to the proposal because of the potential for increased odour, groundwater contamination and traffic congestion requesting that all waste be transported by rail.

TEC also raised concerns regarding the levels of resource recovery at the Bioreactor particularly given the approved AWT at the site has not been constructed.

TADPAI objected to the proposal due to the potential for increased odour, increased traffic (requesting all waste be transported by rail), a potential increase in hazards and risks and a lack of proper community consultation on the Project by Veolia.

SITA objected to the proposal on the basis that it would contradict key NSW government waste policy on waste diversion, result in an oversupply of landfill space and set back the construction of future AWTs in NSW.

4.3 General Public

The proposal received 34 submissions from the general public during the exhibition period, all of which opposed the proposed Project.

The main issues raised in public submissions included:

- potential impacts on traffic flows, road and rail safety;
- the need for provision of local infrastructure and maintenance contributions (particularly for maintenance and improvement of local roads);
- adverse amenity impacts such as odour, noise (including traffic noise) and train induced vibration;
- leachate management and the potential for groundwater contamination;
- pest and vermin management/control;
- unjustified demand and inconsistency with the Infrastructure SEPP; and
- a need for assessment of third party or flow-on impacts from transporting increased waste to Woodlawn.

A summary of all issues raised in submissions by level of concern from special interest groups and the general public is summarised in Figure 8 below.

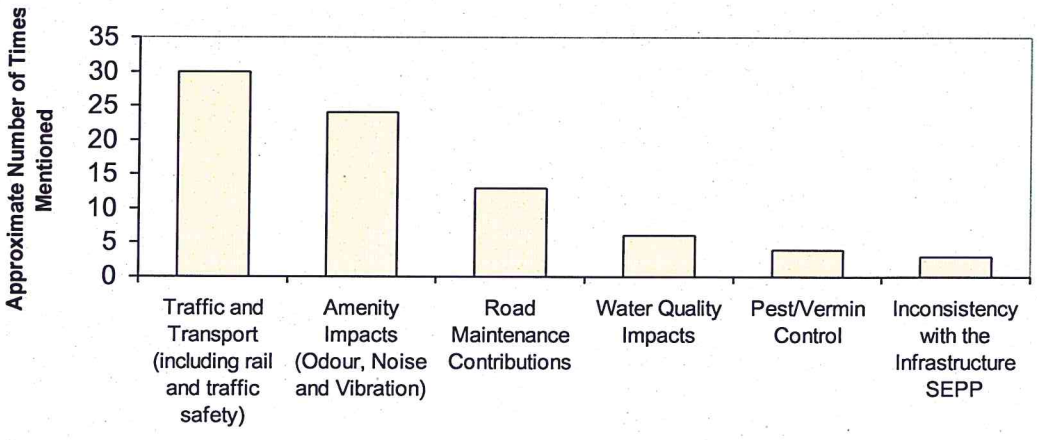

Figure 8: *Summary of Issues Raised by Objectors by Level of Concern*

4.4 Response to Submissions

Veolia has provided a response to the issues raised in submissions (see Appendix F). This response has been made publicly available on the Department's website.

5 ASSESSMENT

In assessing the merits of the Project, the Department has considered:

- the original Environmental Impact Statement (EIS) and existing consent for the site/s
- the relevant environmental planning instruments (see Appendix C);
- the EA, submissions and Veolia's response to those submissions (RTS, see Appendices D to F);
- The Public Review – Landfill Capacity and Demand 2009 (the Wright Review) commissioned by the former Minister for Planning, to assess (among other things) the continuing need for putrescible waste landfill capacity in NSW and estimated take up of Alternative Waste Technology (AWT);
- Waste policy and legislation including (but not limited to);
  - *Waste Avoidance and Resource Recovery WARR Act 2001* (WARR Act);
  - *NSW Waste Avoidance and Resource Recovery Strategy 2007* (the WARR Strategy);
  - the *Review of Waste Strategy and Policy New South Wales 2010* (Richmond Report);
  - *NSW Waste and Environment Levy*; and
  - *Reducing Waste: Implementation Strategy 2011-15.*
- the objects of the EP&A Act, including the object to encourage ecologically sustainable development.

In addition, to assist its evaluation of landfill supply and demand, along with waste recovery, the Department sought independent advice from waste expert, Mr Tony Wright. Mr Wright's report to the Department contains commercially sensitive data that was provided in confidence by the Office of Environment and Heritage. Nonetheless, the Executive Summary of the report (that includes the key findings and recommendations) can be found at Appendix G.

The Department considers the four key issues for discussion are:

- waste - including:
  - annual waste disposal capacity for Sydney's waste **vs** annual waste disposal demand;
  - resource recovery levels; and
  - receipt of waste by road from Regional Councils;
- traffic and transport; and
- odour.

Other issues are considered in **Table 10** of this report.

5.1 Waste

Issue

Issues associated with waste receipt at Woodlawn fall into five distinct categories, namely:

- Physical landfill capacity for Sydney's waste;
- Annual waste disposal capacity for Sydney's waste **vs** annual waste disposal demand;
- Potential impacts of this proposal (if approved) on the scope for future resource recovery in NSW;
- Whether or not there is an appropriate level of resource recovery in accordance with the Infrastructure SEPP; and
- Receipt of waste by road from Regional Councils.

Consideration

Veolia propose to increase the maximum annual waste input levels at the Bioreactor from:

- 400,000 to 900,000 tpa by rail from Sydney's local councils; and
- 50,000 to 130,000 tpa by road from regional councils surrounding the Bioreactor.

Based on this, the Bioreactor would have a maximum input rate of 1.13 million tpa of waste.

Physical Landfill Capacity for Sydney's Waste

The NSW Government is committed to resource recovery. This commitment is embedded in various policies and legislation, not least being the WARR Act and associated Strategy. At the same time, it is acknowledged that at present, and for the foreseeable future, not all waste can be recycled and reused. That is, there is a need for on-going landfill capacity to dispose of Sydney's residual waste.

It is considered prudent to have around 20-30 years of landfill 'supply' at any one time, particularly given the long lead times associated with establishing new landfill capacity. It is also recognised that landfill capacity often comes in large 'chunks', with projects such as the Woodlawn Expansion Project (as opposed to small scale proposals).

As noted in the EA, the Wright Review 2009 and Mr Wright's most recent report to the Department, by 2016-18, all putrescible landfill sites in the Sydney metropolitan area (including Jacks Gully, Belrose, Lucas Heights and Eastern Creek) will have ceased operations. In the case of Eastern Creek, there is some suggestion that this could be as early as 2015. Regardless, in the absence of any other new landfill applications or expansion projects, the short to medium term prospects are that Woodlawn will be left as the only major site for Sydney's putrescible waste disposal.

Woodlawn has ample physical void capacity remaining (some 20 million cubic metres) to accommodate waste in the medium to long term. However, the Department notes that the current Woodlawn development consent is limited to 20 years of operation. Woodlawn has been operating for some seven years, and so in effect, not all of the 20 million cubic metres or so of landfill capacity that currently remains at Woodlawn is 'approved capacity'.

Mr Wright's report to the Department concludes that "*the Government has a fundamental obligation to ensure that infrastructure investment is made to secure waste disposal capacity. Recognition now that greater use of Woodlawn will be necessary... is a critical first step*". Further, Mr Wright notes that there are no obvious alternatives to Woodlawn for the disposal of Sydney's residual waste.

The Department considers that the Woodlawn Expansion Project is critical to ensuring Sydney's landfill capacity is secured into the future, having regard to:

- Ongoing demand for waste disposal;
- Limited opportunities for additional landfill capacity; and
- Slow take-up of Alternative Waste Treatment plants to deal with waste disposal demand.

These issues are discussed further below.

Annual waste disposal capacity for Sydney's waste vs annual waste disposal demand

In the past, major NSW landfills have been 'capped' (i.e. limiting the amount of annual waste receivable) in an effort to increase diversion rates away from landfill and drive investment into AWTs. For example, the conditions of consent for the Bioreactor and Sydney's Clyde Transfer Terminal (where the Bioreactor's waste is sourced) mirror each other, and currently limit (or 'cap') the annual waste receivable and disposal rates to 360,000 tpa. This figure progressively ratchets down as low as 290,000 tpa in the 16th year of operation. The caps are therefore artificially restricting annual disposal capacity.

In addition to this restriction on annual waste disposal capacity, it is now well recognised that AWT processing of mixed putrescible waste has not lived up to expectations and, at present, no Sydney AWT is actually producing compost fit for sale. In any case, mixed waste AWTs leave process residuals amounting to some 40% to 50% of feedstock which must (at this time) be disposed of to landfill.

Further, in his report to the Department Mr Wright notes that there is currently no prospect that sufficient AWT capacity could be operational by 2015 to process the 500,000 to 600,000 tonnes a year of waste currently disposed of at the Eastern Creek Landfill (which is expected to have reached or be nearing capacity by this time). In any case, even if AWT capacity was secured, some 200,000 to 300,000 tonnes a year of AWT process residuals would still need to be accommodated by landfill, thereby giving extra weight to the need for the proposed extra annual waste disposal capacity.

Despite the issues with landfill capacity and AWTs, Sydney's waste disposal demand is in the vicinity of 2 million tonnes of waste per annum, and is predicted to remain fairly high for the foreseeable future, despite the efforts of councils in reducing kerbside waste.

The decreasing annual waste disposal rates (with caps), poor performance of AWTs, coupled with the inevitable closure of some of Sydney's large landfills described above, results in an increasing gap between the amount of waste Sydney demands to be disposed and the amount of waste able to be disposed each year in landfills.

The Department considers the current shortfall between annual waste disposal capacity and annual waste disposal demand to be an unacceptable situation for all stakeholders. The consequences of the shortfall are serious, as it is leading to a situation where Sydney is unable to sustainably manage the disposal of its waste, and the provision of adhoc 'emergency tonnage' to decrease the gap

between supply and demand. This situation will only worsen (as per Figure 9), as the gap between supply and demand becomes larger.

Veolia's justification for additional waste receipt from Sydney draws heavily on the the Wright Review. The Wright Review concludes that there is *"a serious and probably chronic shortfall between the amount of putrescible waste presenting for disposal and the notional aggregate waste input cap"*. Figure 9 below from the Wright Review illustrates the predicted shortfall between landfill disposal demand and capacity (with caps) up until 2024.

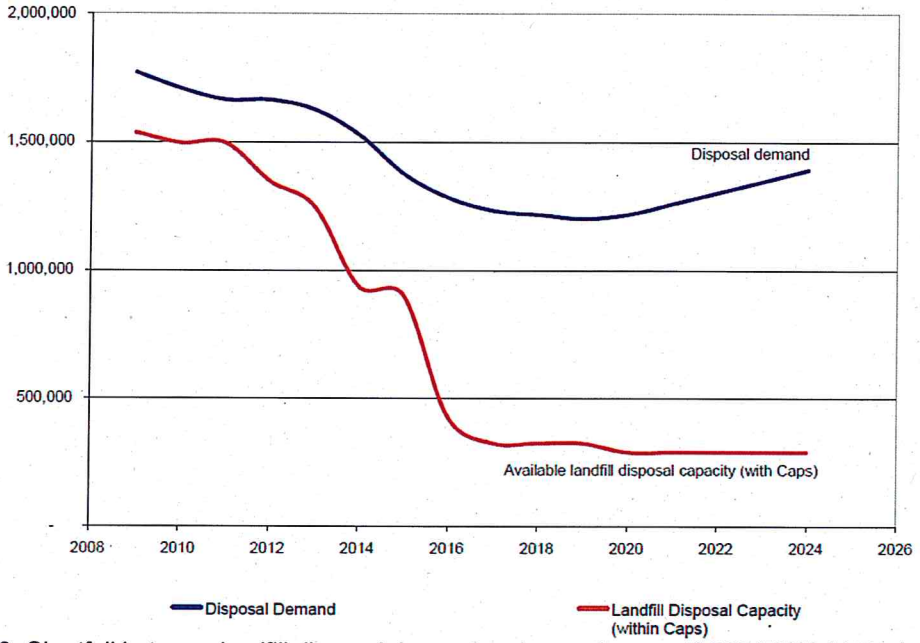

Figure 9: *Shortfall between landfill disposal demand and capacity up until 2024 (Wright Review 2009)*

Based on the above, Veolia's EA concludes that the increased waste input rate proposed by the Project would:

- respond to an urgent need to expand aggregate annual waste input rates to address the chronic shortfall in available annual disposal capacity and to meet the continuing need for putrescible waste landfill capacity in the Sydney region;
- address approximately 40% of the long-term annual shortfall of putrescible waste disposal capacity in NSW (as identified in the Wright Review); and
- (along with the NSW *Waste and Environment Levy*) support and promote the development of future AWT facilities, ensuring that the Bioreactor only caters to the predicted shortfall in residual waste disposal in Sydney.

The Wright Review suggests that an aggregate input cap of around 2 million tonnes per year (as opposed to the current aggregate of 1.485 million tonnes per year) would be necessary to meet immediate demand for disposal of putrescible waste in NSW. That is, the aggregate cap is currently too low. Further, Mr Wright recommended that the waste input caps be discarded without delay as a regulatory measure.

The Department concludes that there is a demonstrable need for greater annual capacity at Woodlawn to deal with both the current and predicted waste disposal demand. This conclusion is further supported by the fact that:

- The caps are artificially restricting landfill capacity, and being lifted adhoc (on an emergency basis), because there is no suitable alternatives to landfilling;
- Resource recovery initiatives (AWTs) have not developed as swiftly or been as effective as initially expected for a variety of reasons (some of which are discussed above); and
- The number of existing landfills in the Sydney waste network is running out of total capacity.

Further consideration on the timing for removal of the caps is discussed below.

Potential Impact of the Project on the scope for future resource recovery in NSW

A number of submissions (including the initial submission from the OEH and TEC's submission) raised concern that approval of the Project would block a significant proportion of Sydney's municipal waste from future AWT processing for resource recovery. So in theory, if the Expansion Project were approved, Veolia could have an excess of annual waste disposal capacity in the short to medium term (refer to Figure 9 above and in particular, the period roughly between 2012 and 2018). There are two principal theoretical outcomes from this excess capacity:

- It could create greater competition in the landfill market and reduce landfill prices; and
- It could reduce resource recovery efforts by making landfilling cheaper and reducing investment into AWTs, (i.e. there is a possibility that Councils will abandon recycling initiatives such as the take-up of AWTs and instead opt to dispose of waste directly to the Woodlawn landfill on the premise that it will be cheaper to landfill there, due to an abundance of annual waste disposal capacity).

To this end, in their original submission the OEH requested that Veolia provide an analysis of the economic impact of the Project on gate prices of landfilling and on resource recovery facilities in the Greater Sydney Region.

The Department acknowledges these concerns and sought detailed advice on the matter (including commissioning Mr Wight to review the project), and also met with the proponent and OEH on several occasions to discuss the issue.

However, upon detailed reflection on this issue, the Department considers the above mentioned theoretical outcomes are unlikely to eventuate in practice. As noted in Mr Wright's report to the Department, if the Project was approved, Veolia would be far from guaranteed that this would result in additional waste instantly flowing in from Sydney to the Woodlawn Bioreactor. The increased waste input rates at the Bioreactor proposed by this Project would only be a 'notional increase' because:

1. The additional annual waste input capacity Veolia wish to secure through this Project is currently being disposed of under contracts at former WSN (SITA) landfills in Sydney;
2. Existing contracts with some 15-20 councils to dispose of this waste (currently held by SITA/WSN) cannot be contested by Veolia until they mature over the next 5 years, that is, the waste market doesn't respond quickly to changes in supply;
3. Veolia cannot contest any contracts (other than those it already holds) until it constructs a new waste transfer station in Sydney to service the Bioreactor (noting Veolia's Clyde Transfer Station is at an environmental capacity of 500,000 tpa, and will remain at this capacity, notwithstanding any increase in capacity at Woodlawn). Veolia's lack of rail capacity in Sydney to rail waste to Woodlawn is likely to take an estimated 2-3 years lead time to resolve;
4. As waste contracts mature and once AWT concerns are resolved, councils are likely to tender for AWT processing given the increasing NSW *Waste and Environment Levy* and measures set out in *Reducing Waste: Implementation Strategy 2011-15* to promote green waste processing and support AWT development;
5. Veolia would have to actually win any new contracts and has a significant cost disadvantage given the high waste transport cost (over 200km by road/rail/road to the Bioreactor), and high operating cost with Bioreactor technology; and
6. Veolia would have to retain their current waste contracts, based on competitive tendering, for disposal of Sydney's waste as they mature.

It is clear to the Department that there are a number of factors inhibiting additional waste from flowing into the Bioreactor, prior to at least 2015 (see particularly points 1 to 6 above), after which the waste market in NSW is expected to operate freely with the *Waste and Environment Levy* (that progressively makes it more expensive to landfill each year), and measures set out in *Reducing Waste: Implementation Strategy 2011-15* driving the future uptake of AWT in NSW.

Further, the above 6 points demonstrate to the Department that if Project approval was to be granted, there are multiple competition issues, as well as infrastructure procurement issues, to be navigated by Veolia before any additional waste could potentially flow into the Bioreactor. These issues may take Veolia some years to resolve. That is, there will be no sudden rush on landfilling at Woodlawn if the project was approved for at least the next 4-5 years, but more likely a progressive ramp up of operations once some of these obstacles are resolved by Veolia. The Department therefore agrees that approval of the Project would initially only result in a notional increase in waste input capacity at the Bioreactor.

Therefore, after detailed investigation and discussion, both the Department and OEH are satisfied that any concern that approval would adversely impact on AWT gate prices or the scope for future resource recovery in NSW is considered unwarranted.

Caps

Veolia's assessment states that the NSW *Waste and Environment Levy* (as opposed to the waste input caps) is the key driver of waste avoidance and resource recovery as it provides economic incentive to reduce waste disposal and stimulate AWTs.

Both the Richmond Report and the Wright Review suggest that the likely cross over date for landfills and AWT gate rates in the C&I waste sector (largely as a result of this levy) is around 2014, as shown

in Figure 10 below. That is, the point where it is cheaper to process waste through an AWT rather than landfill.

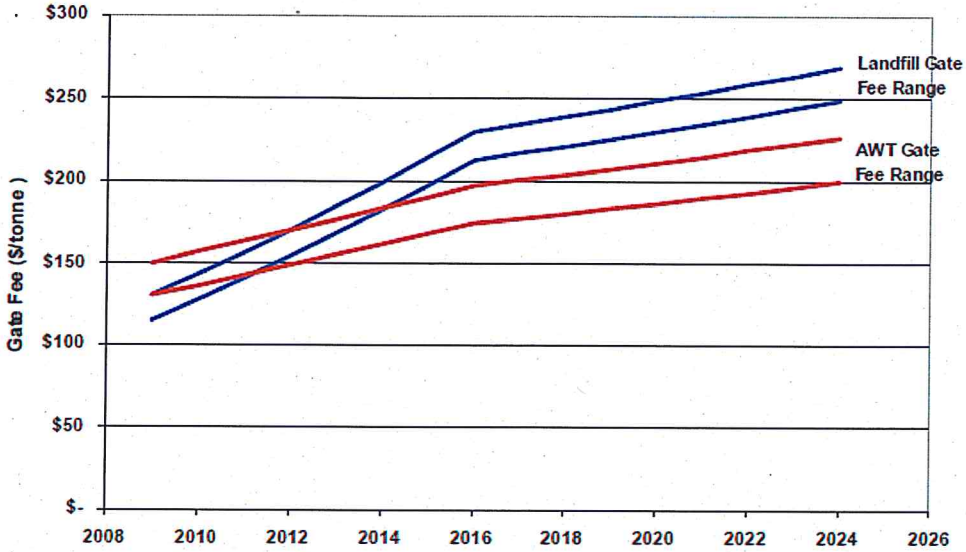

Figure 10: *Cross over date of landfill and AWT gate prices*

Veolia's own assessment concludes that the proposed increase in waste input capacity at the Bioreactor would not negatively impact upon the gate prices for AWTs, or the predicted cross over between landfill and AWT gate prices at 2014. This is because:

- in the past, existing input caps have had no impact on the amount of waste disposed in NSW landfills, nor have they been a driver of investment in AWT;
- clearly, factors other than waste input caps beyond Veolia's control (see points 1 to 6 above) are the drivers of waste generation and flow in NSW and into the Bioreactor; and
- the scale of the annual escalation rate for the *Waste and Environment Levy* would continue to be the overriding driver of an accelerating AWT uptake rate in NSW into the future.

The Department agrees with these assertions and would further argue that the caps are ineffective, unresponsive to the ebb and flow of waste disposal demand, and can not be implemented consistently or equitably through development consents. Both the Department and OEH agree that a market mechanism such as the Environment Levy is a far more effective tool at driving the desired changes toward increased resource recovery.

The Department can see no reasonable justification for leaving the caps in place any longer. There is a demonstrable need to increase the waste input rate at Woodlawn, and as discussed above, this is unlikely to undermine resource recovery initiatives for NSW (refer to 6 points above). The Department recommends that the caps are dispensed with as part of any approval that may be given for the Woodlawn Expansion Project.

Resource Recovery Levels

Under Clause 123 (1a) of the Infrastructure SEPP, an approval authority for any new landfill is required to consider whether a Project demonstrates a suitable level of resource recovery of waste so that the amount of waste is minimised before being placed into landfill.

A number of public submissions from special interest groups including Total Environment Centre, SITA, WSN and Global Renewables raised concern that the Project would contradict NSW government waste policy on waste diversion.

The WARR Strategy is the key NSW Government policy driving diversion of waste from landfills, recycling, increased processing of residual waste and safe disposal of waste to minimise environmental harm.

The WARR Strategy sets the following specific targets for resource recovery by 2014:

- 66% of municipal waste;
- 63% of commercial and industrial waste (C&I); and
- 76% of construction and demolition (C&D) waste.

Table 6 provides a summary of the state's performance to date against the WARR Strategy targets, and shows the progress that has been made since 2000.

Table 6: NSW progress towards the WARR Strategy targets

Waste Sector	2000 State Plan baseline	2002-03	2004-05	2006-07	2008-09 (provisional)	2014 State Plan target
Municipal	26%	30%	33%	38%	44%	66%
C&I	28%	34%	38%	44%	52%	63%
C&D	65%	64%	62%	67%	73%	76%
Overall	-	45%	46%	52%	58%	

The Department is mindful that Veolia does not always have direct control over the source of the waste that ends up in the Bioreactor. Under these circumstances, the Department takes a broader view of how the Proponent is tracking toward the NSW Government targets, just as it did in the assessment of the recent (Cell 5) extension to the Eastern Creek landfill.

From its assessment, the Department considers it is evident Veolia is focused on working with customers to encourage at source separation through initiatives such as education programs with Councils and dedicated food waste runs for commercial vehicles. Some of the initiatives that contribute to the overall waste recovery rates of the Woodlawn Bioreactor life cycle are summarised in Table 7 below.

Table 7: Veolia's resource recovery initiatives feeding into the Woodlawn Bioreactor

Type of Initiative	Waste Stream	Location	Description
Source Segregation	Municipal	Households	Council recycling services
Source Segregation	C&I	Commercial Business	Dedicated recyclable collection services
Recovery	C&I	Shopping Centres	On-site waste management and resource recovery services
Education	Commercial/Business	Commercial Business	Greenhouse Gas Estimator
Education	All	Woodlawn Bioreactor	Woodlawn Eco-Precinct Education Centre

The Department notes on average, councils that Veolia work with are achieving a municipal waste diversion rate of 50%, which is greater than the current NSW average diversion rate of 44%. The Department further notes that the overall AWT disposal rate described earlier (see 'resource recovery' section), is not dissimilar to Veolia's current 'at source' resource recovery rate of 50% for municipal waste.

The Department is therefore satisfied that the Project demonstrates a suitable level of resource recovery (at the source) effectively minimising the amount of municipal waste that is eventually directed to landfill at the Bioreactor.

In terms of C&I and C&D waste, Veolia operates two Resource Recovery Centres that receive non-putrescible solid waste in Sydney, located at Port Botany and Greenacre. Veolia's Horsley Park Waste Management Facility accepts residual materials from these sites. The Horsley Park Waste Management Facility also accepts waste directly from customers where further recycling activities are undertaken, particularly for wood waste. All facilities target a range of material for recycling, separation and diversion from landfill, including paper/cardboard, plastics, steel, wood and brick/concrete. Further, it is apparent that Veolia have future plans to expand and improve their current C&I and C&D waste recycling operations in NSW, with a new project in Camellia, which is also consistent with Clause 123 of the Infrastructure SEPP.

In addition, the Department notes there are many other initiatives and commitments from Veolia outlined in the EA and RTS with regard to resource recovery. Suffice to say, it is clear to the Department that Veolia are implementing all reasonable, feasible and best practice measures to minimise the amount of residual waste 'at the source' (i.e. by educating their customers) before being directed to landfill at the Bioreactor.

A number of other submissions also suggested that Veolia should be required to build the approved Woodlawn AWT, prior to any consideration of increased landfill capacity at the Bioreactor.

The EA and Veolia's RTS reiterated the company's commitment to building the Woodlawn AWT facility, which would process 280,000 tonnes of garden and mixed-solid waste a year to assist in rectifying the degraded areas of the old Woodlawn mine site. In any case, the Department considers the AWT outside the scope of the application under consideration.

Further, the Department is firmly of the view that Veolia should quite reasonably be able to reserve its commercial decision on when to build the AWT based on winning municipal contracts for waste disposal and clarity that the technology is viable. Significant investment in AWT infrastructure requires a secure volume of waste in order to make Projects bankable.

Mr Wright's report concludes that *"Veolia is a respected international waste management corporation clearly involved in significant resource recovery activities as well as operating its Woodlawn Bioreactor Landfill. The EA and the Veolia Submissions Report demonstrate that the company's activities in resource recovery at source (rather than at the end-of-pipe landfill site) are consistent with the NSW WARR Strategy and with the intent of Clause 123 of SEPP (Infrastructure) 2007".*

The Department concurs with this conclusion.

Furthermore, as noted in Mr Wright's report, although not recognised under the Infrastructure SEPP, energy production from waste, renewable energy production and avoidance of greenhouse gas emissions are key objectives of the NSW State Plan. From July 2009 to June 2010 the Bioreactor generated 14,331 Megawatts per hour (MWh) of renewable energy, which is enough electricity to power 1,791 homes for a year. Finally, Veolia's EA and RTS show that energy recovery from the Bioreactor is accelerating and that methane gas capture (up to 92%) is expected to increase from 2,000m^3 an hour to more than 12,000m^3 an hour consistent with the NSW State Plan, therefore, recognition of this contribution in the context of resource recovery is appropriate.

The Department is therefore satisfied that the Project presents a suitable level of resource recovery by minimising the amount of waste placed into landfill and is therefore generally consistent with the objective and intent of Clause 123 (1a) of the Infrastructure SEPP. The other provisions of clause 123 are considered in table 10 below.

Demand for Additional Waste by Road from Regional Councils

In August 2010, the then Minister approved a modification to the consent for the Woodlawn Bioreactor to allow the receipt of up to 50 000 tpa of putrescible waste by road from nearby councils including:

- Goulburn Mulwaree Council;
- Palerang Council;
- Queanbeyan Council; and
- Bega Valley Shire Council.

Veolia is now proposing to receive an additional 80,000 tpa (total of 130,000 tpa) of waste by road from other surrounding councils including:

- Upper Lachlan Shire Council;
- Eurobodalla Shire Council;
- Yass Valley Council; and
- the Australian Capital Territory (ACT).

Veolia's EA provides a breakdown of waste sent to landfills for disposal by a select number of regional areas who could potentially benefit from the proposal. This includes a discussion of the landfill disposal situation for each of the abovementioned councils.

While the Department acknowledges that a number of additional regional councils within proximity to the Bioreactor could benefit from the Project, it is clear to the Department that landfill capacity at Woodlawn should principally be reserved for the disposal of Sydney's municipal waste, as discussed above.

This conclusion is supported by Mr Wright in his report when he states that *"given the likely continuing demand for a measure of Sydney waste disposal, the inevitable completion of Sydney landfills, and the uncertainty about the success of future AWT facilities, it would be prudent to reserve capacity for Sydney putrescible waste disposal at the Woodlawn Bioreactor Landfill. In the circumstances disposal of further regional waste to the Woodlawn Bioreactor Landfill (above that amount already approved) might best be reserved only for proximate local councils willing to take the opportunity to permanently close poorly performing landfills".*

The ACTs Department of Territory and Municipal Services (ACT DTMS) raised concerns that approval to receive regional waste by road from the ACT would undermine the waste minimisation objectives of the ACT government and result in waste being diverted from recycling in the ACT in favour of disposal at the Bioreactor because it would be cheaper to do so. ACT DTMS suggested that any approval include a condition to prohibit waste from the ACT being disposed of at the Bioreactor.

The Department asked Mr Tony Wright to review and provide a supplementary independent response to those issues raised in the submission from ACT DTMS. In his response, Mr Wright concluded that:

- the Bioreactor is focused on disposal of putrescible waste not dry mixed C&I waste, therefore would not result in the diversion of waste from current and future dry mixed C&I waste recycling facilities in the ACT;
- due to high transport costs, disposal at the Bioreactor is likely to be more expensive than waste disposal in the ACT (i.e. both via landfill and/or recycling of mixed dry C&I waste);
- based on the *Mutual Recognition Agreement 1992* between the States and Territories, it is unlikely that conditions of approval could be enforced by the Department which prohibit waste from the ACT being disposed of at the Bioreactor; and
- based on the above, there would be no reason to change the relevant (draft) condition of approval (see conclusion below).

The Department agrees with this analysis.

Traffic and transport issues associated with the transport of regional waste are discussed in section 5.2 below.

Conclusion

It is considered that the recently released *Reducing Waste: Implementation Strategy 2011-15,* together with the progressively increasing NSW *Waste and Environment Levy,* will assist in bringing AWT solutions into a more viable framework. Notwithstanding, the Department considers there is still a demonstrable need for additional landfill capacity, and the Woodlawn Expansion Project can provide some of this capacity.

On balance, the Department concurs with the views of Mr Wright and considers that a critical need exists for the Project, except in relation to the disposal of additional regional waste by road at the Bioreactor, which may only be acceptable in certain circumstances. Further, the Department would argue the Woodlawn facility is a critical piece of waste infrastructure integral in the management Sydney's waste.

Therefore, the Department has recommended a number of conditions of approval to ensure the right balance between demand and supply of approved landfill space in NSW is maintained, including:

- removing the annual waste input cap at the Bioreactor to the extent of the site's environmental envelope (i.e. a maximum input of 1.13 million tpa of waste) including approval to receive:
  - 900,000 tpa of waste by rail from Sydney;
  - 100,000 tpa of residual waste from Woodlawn AWT;
  - 50,000 tpa of regional waste by road; and
  - up to a further 80,000 tpa of regional waste by road following a request to the Director-General and provided that Veolia can demonstrate (to the satisfaction of the Director-General) that the receipt of the additional regional waste:
    - would result in a net environmental benefit, such as (but not limited to):
      - the permanent closure of a smaller municipal landfill facility with poor environmental performance; and
    - would not significantly impact on the capacity of the Landfill and its primary purpose to accept waste from Sydney.

5.2 Traffic and Transport

Issue

The increase in waste throughput at both the IMF and the Bioreactor would result in increased local and regional traffic (including rail) during operations, which could impact on the safety and capacity of the surrounding infrastructure networks.

Consideration

Figure 11 below provides an overview of the Project's traffic and transport related impacts. The Project would increase waste delivered by rail from Sydney to the IMF by 400,000 tonnes per annum. The previous assessed maximum throughput (including waste direct to the approved AWT) was 780,000 tonnes per annum. This brings the total proposed annual waste throughput at the IMF to 1,180,000 tonnes per annum.

Similarly, the Project would increase waste delivered by road to the Bioreactor from the IMF by an additional 500,000 tpa, and an additional 80,000 tpa from regional NSW. The previously assessed maximum throughput (including waste to the approved AWT) was 550,000 tonnes per annum which

is capped under maximum input limit of 500,000 tpa. This would bring the total of proposed annual waste to the Bioreactor to 1,130,000 tpa.

There would therefore be two sources of road traffic associated with the Project, namely:

- trucks transporting Sydney's waste between the Crisps Creek IMF and the Bioreactor (along Bungendore Road and then Collector Road); and
- trucks transporting waste from regional LGAs to the Bioreactor, via a number of major roads.

The potential transport impacts of the Project can therefore be divided into three distinct categories, namely:

- local road impacts;
- regional road impacts; and
- rail traffic impacts.

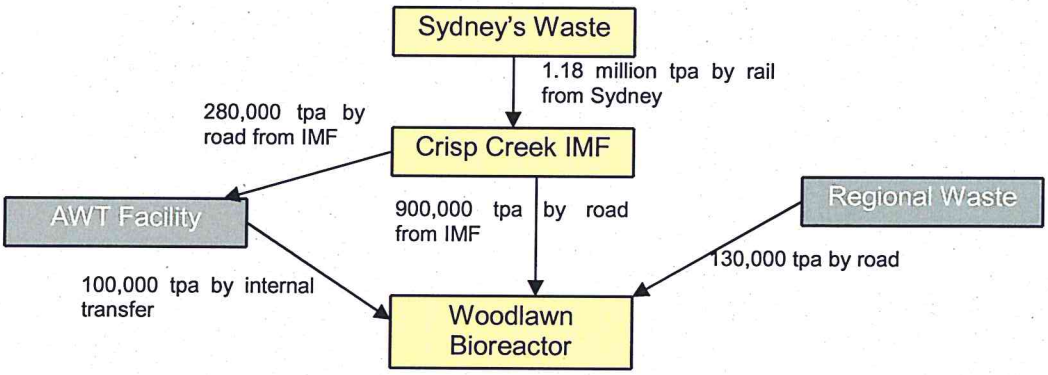

Figure 11: *Key transport details of the Woodlawn expansion Project (including existing approvals).*

Local Road Impacts

The roads surrounding the Bioreactor are located in rural areas, and include State and Council roads.

For the purposes of the Traffic Impact Assessment, trucks have been conservatively defined as '19-tonne' trucks, travelling in two-way movements (i.e. to and from the IMF). The original EIS for the Bioreactor considered traffic impacts for 20 two-way truck movements per hour between the IMF and the Bioreactor (a distance of approximately 8 kilometres), over an approved 11 hour day.

The vast majority of additional waste deliveries to the Bioreactor along local routes would be from trucks transporting Sydney's waste between the Crisps Creek IMF and the Bioreactor. Truck traffic is expected to increase between the IMF and the Bioreactor by 10 two-way truck movements (5 trucks) per hour, over an extended 16 hour day.

Including the approved (but not yet constructed) AWT, the Traffic Impact Assessment (TIA) for the Project found that there would be an additional 12 two-way truck movements (6 trucks) per hour on local roads between the IMF and the Bioreactor, to that already approved.

Therefore, a total of 42 two-way trucks movements (21 trucks) per hour or 672 two-way truck movements (336 trucks) per day are predicted to occur between the Crisps Creek IMF and the Bioreactor, over an extended 16 hour day at full operation.

Trucks associated with the delivery of waste to the Bioreactor from regional areas would equate to a total of 54 two-way truck movements per day (i.e. 27 trucks).

Potential impacts would be mostly absorbed by three roads - Collector Road, Bungendore Road and Braidwood Road (Figure 12).

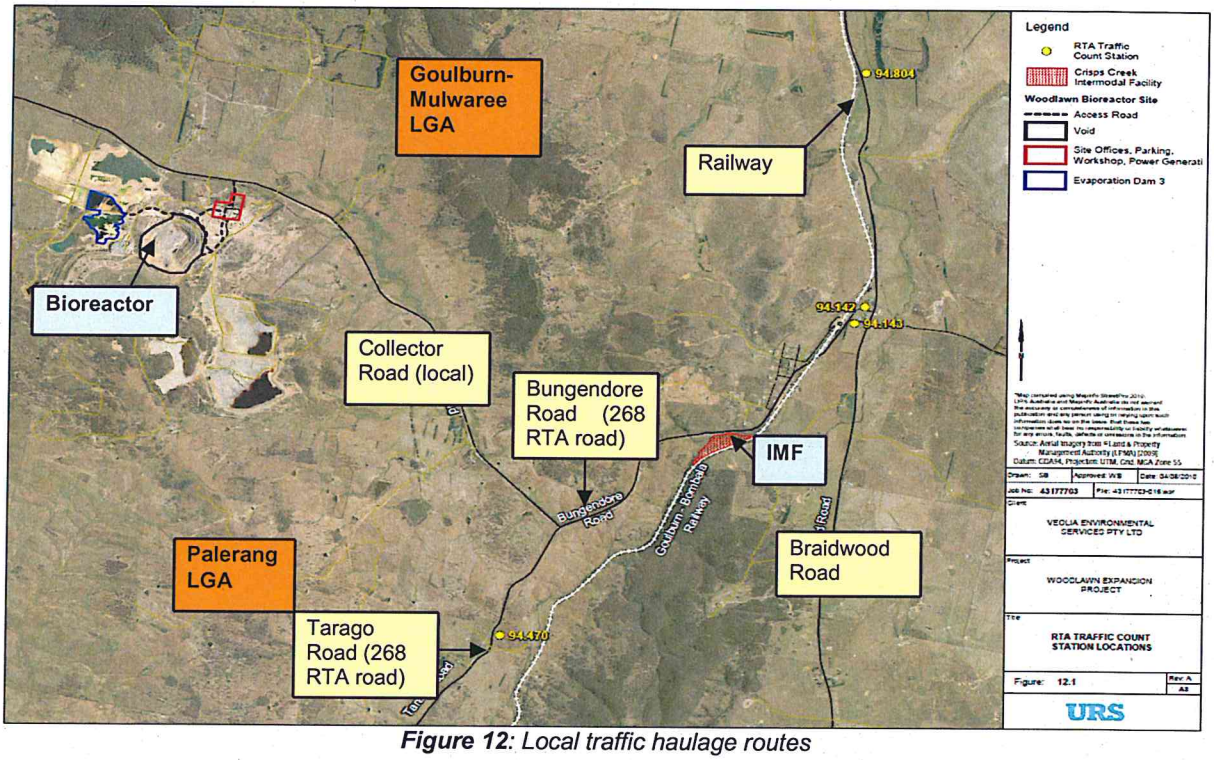

***Figure 12**: Local traffic haulage routes*

For the purpose of the TIA, it has been assumed that an additional 11 employees would travel to and from the Bioreactor during AM and PM peak hours. The TIA also included an assessment of impacts from the delivery of waste from regional LGAs, and all other approved operations in the Woodlawn Eco-Precinct (such as the Windfarm and AWT).

The modelled impacts on the local roads during the worse-case scenario AM peak hour are summarised in Table 8 below.

***Table 8:** Existing and predicted AM peak hour traffic movements for the Project (two-way)*

Local Road		Collector Road	Bungendore Road	Braidwood road
Existing Traffic	Traffic Flow	150	440	450
	Waste deliveries from the IMF to the Bioreactor	10	10	0
	Total	**160**	**450**	**450**
	LOS*	**A**	**A**	**B**
Proposed Traffic	Waste deliveries from the IMF to the Bioreactor	30	30	0
	Regional waste deliveries to the Bioreactor	54	54	8
	All other additional traffic**	93	87	67
	Total	**337**	**621**	**525**
	LOS	**A**	**B**	**A/B**
Total percentage change in traffic		**110%**	**38%**	**17%**

**LOS - Level of Service and **Includes estimated operational traffic from Woodlawn AWT, construction traffic from Woodlawn Windfarm and additional staff traffic from Woodlawn AWT and the Crisps Creek IMF*

The assessment has assumed a 'worst case scenario' with all regional waste deliveries occurring during the AM peak hour.

The Department considers that this is a highly conservative assessment because Veolia has indicated that during normal operations, regional waste deliveries to the Bioreactor would arrive at varied times during normal day-time operating hours in order to minimise associated amenity impacts. Therefore, in reality, truck movements from regional waste deliveries to the Bioreactor are more likely to be spread over the 11 hours from 7:00 am to 6:00 pm.

Based on Table 8 above, it is evident that during the AM peak hour period the Project would increase the number of vehicles from:

- 160 to 337 on Collector Road, an increase of 110 percent;
- 450 to 621 on Bungendore Road, an increase of 38 percent; and
- 450 to 525 on Braidwood Road, an increase of 17 percent.

Despite the increase in traffic on Collector Road being significant, the TIA states that the impact of this additional traffic on the three roads is expected to be negligible with all roads having a Level of Service (LOS) of A or B (see Table 8). Therefore, in a worst-case scenario (LOS B), road conditions would maintain a stable flow with reasonable freedom to select speed and manoeuvre within traffic.

The TIA also included a SIDRA modelling analysis to estimate the cumulative impact of the Project on three key intersections between the Bioreactor and IMF, namely the:

- IMF site access/Bungendore road intersection;
- Bungendore Road/Collector Road intersection; and
- Bioreactor site access/Collector Road intersection.

This analysis concluded that the Project would have no significant impacts on these intersections. The degree of saturation (DoS) for all three intersections would remain well below full capacity (i.e. the 0.90-0.95 threshold). The longest queue length is expected to be 7 cars (i.e. 42m) at the intersection of Bungendore and Collector Road with a DoS of 0.55. As such, the TIA concluded that no intersection upgrades would be required as a result of the Project.

There are a number of other intersections in the vicinity of the Bioreactor and the Crisps Creek IMF, however, the impact of operational vehicles at these intersections is expected to be negligible because the only vehicles accessing these intersection during the operational phase of the development would be those delivering waste to the Bioreactor from regional areas which only amounts to a handful of vehicles per hour or 54 two-way movements per day (see Table 8 above).

While the EA indicates that the impact of the Project on the LOS of intersections and local roads would be minor and within operational capacity, a number of submissions raised concerns over the need for road maintenance and/or section 94 contributions. The Department is satisfied that the levy is justified.

As a result, Veolia has generally accepted the conditions requiring road maintenance contributions to both Palerang and Goulburn-Mulwaree Councils of 4.1 cents per kilometre per tonne of waste hauled on council maintained roads. The rate would be adjusted annually to allow for inflation. The Department has incorporated the Council's requirements into the recommended conditions of approval.

Regional Road Impacts

As the result of a modification to the Minister's consent for the Woodlawn facility in 2010, Veolia currently has approval to receive up to 50,000 tpa of waste by road at the Bioreactor from surrounding LGAs including Palerang, Goulburn Mulwaree, Bega Valley and Queanbeyan.

The approved haulage routes for the transport of this waste are shown in Figure 13 below.

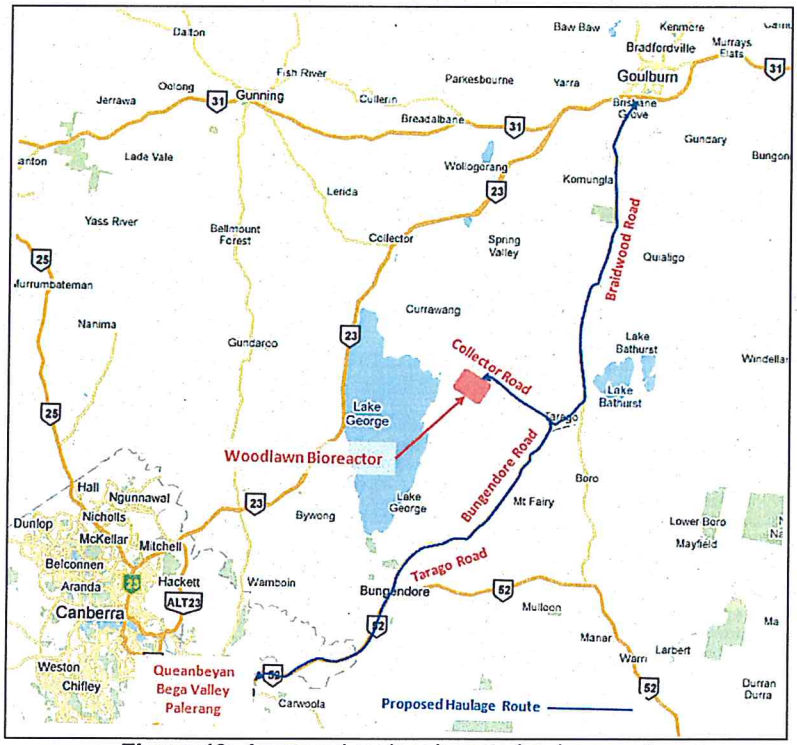

Figure 13: *Approved regional waste haulage routes*

The Bioreactor currently receives 20,000 tpa of waste a year from the north (i.e. Goulburn Mulwaree) and 30,000 tpa of waste from the south (i.e. Palerang, Bega Valley and Queanbeyan) along Main Road 268 Bungendore/Tarago Road.

The Project proposes the transportation of an additional 80,000 tpa of waste by road from other regional areas including the Upper Lachlan, Yass Valley, Eurobodalla LGAs and the Australian Capital Territory (ACT, see Figure 14). Therefore, the total amount of waste proposed to be transported from regional LGAs to the Bioreactor would be up to 130,000 tpa.

A detailed breakdown of approved and proposed regional waste sources, volumes and vehicle movement impact considerations is provided in Table 9 below.

Table 9: *Regional waste sources, volume and vehicle impact movements*

Council	Waste (tpa)	Annual Trucks	Daily Trucks One Way (Two-Way)
Approved Regional Waste (50,000 tpa)			
Goulburn Mulwaree	20,000	1,053	4 (8)
Palerang	10,000	526	2 (4)
Queanbeyan	8,000	421	2 (4)
Bega Valley	12,000	632	2 (4)
Sub Total	50,000	2,632	12 (24)
Proposed Additional Regional Waste (80,000 tpa)			
Upper Lachlan	3,000	158	1 (2)
Yass Valley	3,000	158	1 (2)
Eurobodalla	21,000	1,105	4 (8)
ACT	53,000	2,789	9 (18)
Sub Total	80,000	4,210	15 (30)
Total	**130,000**	**6,842**	**27 (54)**

In the EA, Veolia proposed a new set of haulage routes for regional waste by road (see Figure 14 below).

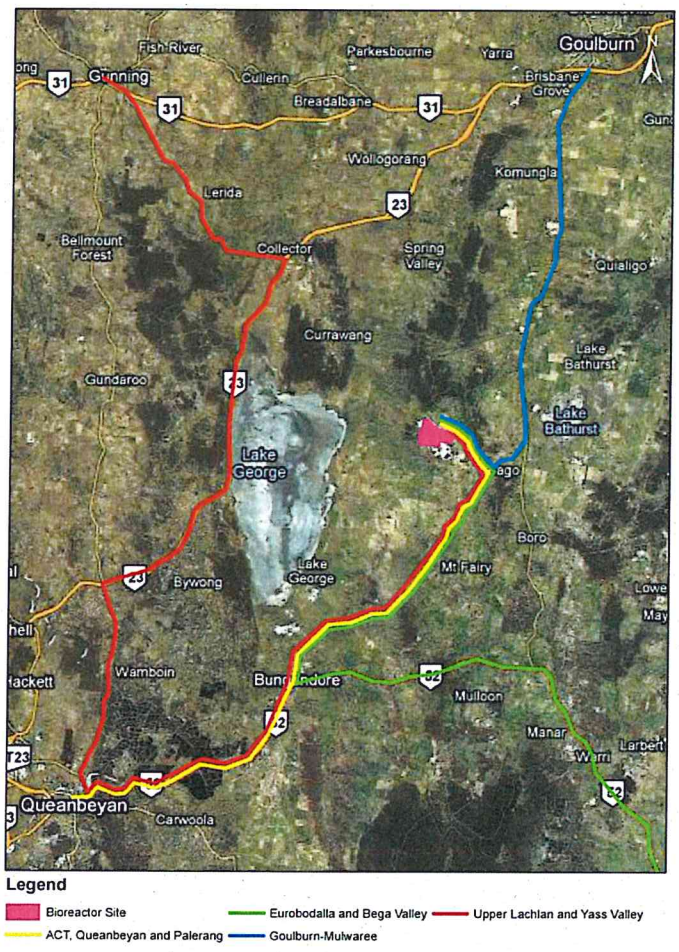

Figure 14: *Proposed regional waste haulage routes*

As mentioned previously, all regional waste trucks would arrive at the Bioreactor during standard day-time hours (i.e. between 7.00am – 6.00pm) in order to minimise amenity impacts on the communities of Bungendore and Tarago.

Veolia's regional TIA proposed that regional waste be transported via three key highways (see Figure 14) before travelling along Bungendore Road, Collector Road and Braidwood Road, to access the Bioreactor site. The three key highways include:

- the Hume Highway (route 31);
- Federal Highway (route 23); and
- Kings Highway (route 52).

The Project is expected to increase the number of two-way heavy vehicle movements to the Bioreactor from regional areas from 24 to 54 (30 additional) a day, an increase of approximately 145% (see Table 9 above). Based on Veolia's regional TIA, AADT data provided by RMS for 2009 and the volumes/source of regional waste proposed in Table 9, the Department estimates that heavy vehicle movements from the transport of regional waste would make up approximately:

- 1.5% (or less) of AADT on the Hume Highway (route 31);
- 0.03% of AADT on the Federal Highway (route 23); and
- 1.2% of AADT on the Kings Highway (route 52).

With existing high traffic volumes on these state highways, Veolia concluded that it is likely that this additional traffic will be spread over a wide transport network and the impact on regional road networks would dissipate with normal traffic growth. Therefore, the impact of this traffic on these highways was considered negligible. Based on the above, the Department concurs with this conclusion.

Finally, the impact of the transport of this waste on local roads was considered as part of the above local TIA which concluded that the Project would have a negligible impact on the LOS of local roads and would not trigger the need for any local intersection upgrades.

Haulage Routes

Despite the conclusions of the TIA, Palerang Council's submission on the Project suggested two alternative haulage routes for regional waste in order to minimise the potential traffic impacts of the Project on narrow sections of Bungendore/Tarago Road and associated amenity impacts on residents in their LGA, in particular, on the community of Bungendore (see Figures 15 & 16).

In particular, Palerang Council recommended that waste from the Upper Lachlan, Yass, Eurobodalla and Bega LGAs (see routes indicated in green and red below in Figure 15) should be directed to travel through Tarago rather than through Bungendore.

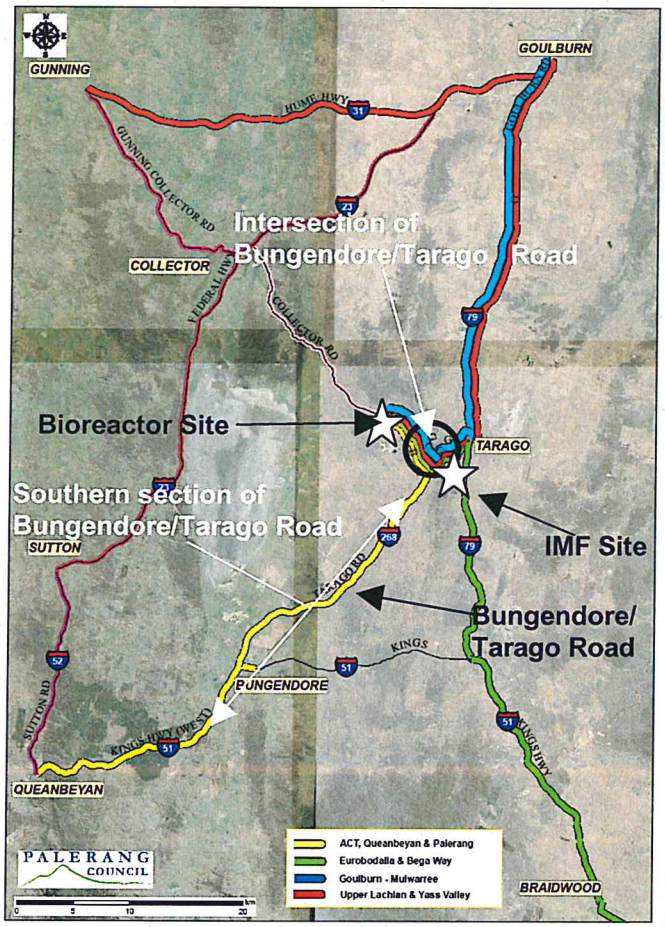

Figure 15: *Palerang Council's suggested haulage routes for regional waste*

Palerang Council considered that these alternate routes were shorter, via more main roads and on roads which were in better condition than those proposed (therefore safer).

RMS has reviewed these alternate routes and provided a supplementary submission on the Project. RMS concluded that the alternate routes are shorter, more efficient and from an overall network perspective, provide a better outcome. The alternate routes were therefore supported by RMS.

The Department concurs with the views of RMS and Palerang Council and considers that the alternate routes proposed by Palerang Council:

- (as above) are shorter, more efficient, via more main roads and on roads which are in better condition; and
- would provide a more even split of traffic movements and traffic related amenity impacts on key communities such as Tarago and Bungendore (i.e. 45/55 traffic split rather than a 15/85 split as proposed by Veolia).

In addition, the Department is satisfied that the proposed alternative haulage routes would not affect the conclusions of the TIA, that:

- the three key local roads would maintain a LOS of A or B;
- all three key intersections between the Bioreactor and the IMF would remain well below capacity (i.e. the 0.90-0.95 threshold), therefore not triggering the need for any local intersection upgrades as a result of the Project; and
- no trucks would be required to travel on the Federal Highway (Route 23).

The Department has therefore recommended a condition to restrict the haulage of regional waste to the Bioreactor to those routes specified in Figure 15 above, unless otherwise approved by the Director-General (e.g. where an alternate route is shown to be more efficient).

Bungendore/Tarago Road Upgrades

Palerang Council, RMS and a number of public submissions also raised road safety concerns with the Project regarding increased truck movements on narrow sections of Bungendore/Tarago Road (Main Road 268).

Figure 15: *Damaged shoulder of Bungendore Road (Palerang Council, 2011)*

Palerang Council raised road safety concerns in relation to the southern section of Bungendore/Tarago Road where the bitumen seal is currently less than 7m wide (see Figure 16), and has recommended road upgrades such as widening works to address the worst sections.

In the latter stages of the assessment, RMS raised additional concerns related to a different section of Bungendore/Tarago Road, between the IMF and Bioreactor which is currently a single lane (each-way) arrangement. RMS was concerned that increased trucks travelling along this section of road would damage sealed road shoulders when encouraging motorists to overtake. RMS concluded that a climbing lane on this section of road may be required.

The Department has noted that Palerang Council's concerns relating solely to increased trucks on the southern section of Bungendore/Tarago Road as a result of waste deliveries to the Bioreactor from regional areas, where as RMS's concerns relate to the increase in trucks on the section of

Bungendore/Tarago Road between the IMF and the Bioreactor resulting from the Project (i.e. from Sydney's and/or regional waste deliveries).

As a result of these concerns the Department has recommended a number of conditions of approval which require Veolia to:

- undertake a detailed pavement analysis/road safety audit of Main Road 268 to the south of the intersection of Collector Road with Main Road 268 where the bitumen seal of the road is currently less than 7 metres wide (in consultation with Palerang Council and RMS);
- establish mandatory road upgrades and/or traffic management measures identified by the audit to address all road safety issues associated with the Project on this section of the road;
- construct the road upgrades recommended by the audit on this section of road, prior to the receipt of additional regional waste at the Bioreactor;
- evaluate the suitability of the provision of a climbing lane or other suitable road upgrade alternatives on the section of Main Road 268 (Bungendore/Tarago Road) between the Crisps Creek IMF site and the Bioreactor in terms of road traffic safety and the safety of the Proponent's truck drivers negotiating the right-hand turn into Collector Road and if deemed necessary, provide the most suitable road upgrade to the satisfaction of Goulburn Mulwaree Council, prior to the commencement of expanded operations; and
- update the existing Transport Code of Conduct for the site in consultation with RMS to prevent truck drivers using road shoulders and minimise the impact of the Project on local roads (including measure to reduce conflicts with local school bus operators), prior to the commencement of expanded operations.

Veolia has reviewed the recommended conditions and accepts that there may be a need for road upgrades to occur, prior to the commencement of expanded operations as a matter of safety and precaution.

Nevertheless, as Table 9 and Figure 15 demonstrate, the Project would only generate 26 two way movements per day on the southern section of Tarago Road (Main Road 268) in the Palerang LGA (Figure 1 also shows the LGA boundary). The Department considers that Veolia's truck movements would be relatively minor in terms of the overall capacity of the road (approximately 4% of the average annual daily traffic).

The Department has therefore recommended a condition of approval that would allow Veolia to receive reduced road maintenance contributions (reflective of their relative road usage), payable to Palerang Council (based on the difference between the cost of the up-front road upgrades and the annual contributions which are based on tonnes of waste hauled).

The Department is satisfied that with the recommended conditions in place, the necessary road upgrades would occur in a timely manner to ensure road safety (i.e. prior to the receipt of additional regional waste), but in a manner which is fair to Veolia (i.e. through the reduction in annual road maintenance contributions).

Rail Traffic Impacts

The Project involves the receipt of up to 1.18 million tonnes of waste at the IMF by rail from the Clyde Transfer Terminal (CTT) in Sydney.

Under the existing consent for the IMF, Veolia has approval to receive and unload up to 2 trains a day, 6 days a week.

While current operating conditions generally only require one train each day, two trains a day run on occasion. Each train (56 containers) travels from the CTT to the IMF where 2 rail sidings allow train sets to be split into 2 for unloading onto containerised trucks before being transported to the Bioreactor.

Veolia's rail operator Pacific National undertook an assessment of the impact of the Project on the existing rail operations which concluded that the transport of the additional waste would be feasible. Veolia estimates that the transport of the additional waste can be accommodated by the running of 2 trains per day with 60 containers on each and a payload of 32 tonnes per container (1,920 tonne capacity per train or 3,840 per day). Each train would be 29.2m (4 containers) longer than the existing with a total length of 924m, well within the total length of the IMF rail siding at 1137m.

The Project would not result in minimal rail impacts beyond the existing approved operation.

A number of public submissions raised concerns regarding local rail crossing time delays, decreased safety at local rail crossings and the need for the upgrade of these crossings, while others suggested

extending the existing Tarago/Bungendore rail line from the IMF to the Bioreactor site so that all waste would be transported by rail, eliminating traffic impacts and improving local road safety.

At present train drivers are currently required to temporarily park their train across the Bungendore Road rail crossing in order to manually activate the switching device to travel to Goulburn which can result in time delays for local residents. However, Veolia has received correspondence from Australian Rail Track Corporation (ARTC) which confirms that a new electronic switching system known as 'Train Working Order' is being implemented on the Canberra rail line and is expected to be completed by early 2012. This would eliminate the need for trains to stop at the Bungendore Road rail crossing.

In addition, the Department does not consider that the operation of 2 trains per day (each way) would result in adverse impacts on rail traffic and crossing safety given existing low train numbers on the Canberra line (3 passenger trains each way, each day). As above, Veolia on occasions runs 2 trains a day and has approval to do so (6 days a week), the impacts of which have already been assessed as part of the existing approved development. Therefore, the Department does not consider that the Project warrants any rail crossing upgrades.

Notwithstanding, to address resident concerns, the Department has recommended a condition of approval which requires Veolia to prepare and implement a Rail Transport Code of Conduct for the Project including (but not limited to) locomotive arrival and departure procedures (e.g. reduced speeds), measures to minimise rail traffic noise and procedures to ensure trains do no queue on the rail network.

Finally, with regard to the suggestion that the Canberra rail line should be extended from the IMF to the Bioreactor, the Department is not able to comment on this as it does not form part of Veolia's current Project application, nor did Veolia comment on this at the preferred Project stage. The logistics and financial feasibility of such a proposal is a matter for Veolia as a business entity.

Conclusion

The Department is satisfied that the operational impacts of the Project on the local and regional road network would be minor. The Department considers that the existing road network has sufficient capacity to safely cater for increased traffic resulting from the Project and where necessary, has recommended conditions of approval to ensure that roads are safe through maintenance and upgrades. Further, the Department has also included conditions of approval to ensure that truck and train drivers are readily informed to minimise the impact of the Project on local road and rail networks.

5.3 Odour

Issue

The increase in waste throughput at both the IMF and the Bioreactor has the potential to result in offensive odours being emitted from the site and adversely affecting the amenity of nearby residents.

Consideration

The main sources of odour at the Bioreactor include:

- treated and untreated leachate including that stored in the on-site evaporation dams; and
- fresh and aged waste handled/processed on the active tipping face.

The main source of odour at the Crisps Creek IMF is from fresh and aged waste which arrives by rail in sealed shipping containers.

The nearest private residence to the Bioreactor is located approximately 3.7km away on a property called 'Torokina' (see Figures 2 & 6). The closest residential receptor to the Crisps Creek IMF is located approximately 680 metres (m) away on a privately owned property named 'Chinnery' (see Figures 2 & 4).

It is considered that the greatest source of potential odour impacts from the Project would result from the recirculation of leachate at the Bioreactor and storage of untreated leachate in evaporation dam No. 1.

The EA included an assessment of all odour sources including the cumulative odour impacts from the operation of the approved AWT. The odour modelling found that the OEH's rural odour criteria of 6 odour units (OU) per cubic metre would be met at all sensitive receptors near both the IMF and the Bioreactor under worst case conditions with ground level odour concentrations ranging between 0.5 to 3.4 OU at the nearest receptor (i.e. Woodlawn Farm which is owned by Veolia). Based on this

assessment, the EA concluded that the Project would not have a detrimental impact on surrounding residents.

Regardless, both the Department and the OEH are aware that the existing operations at Woodlawn have been the subject of some complaints from local residents in regards to offensive odour emissions and subsequent off-site amenity impacts.

The majority of public submissions received by the Department raised odour as an issue of particular concern, especially given that the proposed Project involves the intensification of operations at the IMF and the Bioreactor, therefore there is a high probability that the odour problem would get worse.

In response to these complaints OEH has been working with Veolia to trial a range of alternate odour control techniques with limited success. Some of these techniques have included alternate waste cover systems and alternate management techniques for leachate storage ponds.

OEH suspect that several factors such as flawed modelling inputs, non-consideration of some potential odour sources and specific odour emission rates may have resulted in under-prediction of odour impacts from the Bioreactor. Further, OEH site inspections have confirmed a number of potential odour sources on the site.

Whilst Veolia has demonstrated that the expanded operations would comply with the 6 odour unit assessment criteria, both the OEH and the Department have residual concerns about the existing management measures to control odour. It is clear to the Department and OEH that odour management could be improved on-site (despite Veolia's on-going efforts to rectify this issue) and represents an on-going problem for residents near Veolia's operations at Woodlawn.

To address this, both the Department and OEH recommended a condition of approval which requires Veolia to commission an independent odour expert to undertake a site-wide (Bioreactor and Crisps Creek IMF) Independent Odour Audit (IOA). The IOA report would identify any offensive odour sources and propose mitigation measures for its effective control.

Any recommendations of the IOA would need to be implemented prior to the commencement of expanded operations.

The Department has incorporated this requirement into the recommended conditions of approval. In addition, the Department has recommended a rolling condition which requires Veolia to tri-annually audit the site's environmental (including odour) performance and implement any mandatory recommendations of annual IOAs to the satisfaction of OEH.

Finally, the Department has recommended a further condition requiring Veolia to prepare and implement a comprehensive Air Quality and Greenhouse Gas Management Plan for the Project, including detailed measures to manage the odour impacts of the Project. This plan would be prepared in consultation with OEH and continually updated to reflect any mandatory odour controls or recommendations of an IOA.

Conclusion

Both the Department and the OEH are satisfied that with these conditions in place, odour control and management would improve at the site.

5.4 Other Issues

Table 10: *Summary of Other Issues*

Issue	Assessment	Recommendation
Soil and Water	• No significant construction activities are proposed. • A soil and water assessment was undertaken as part of the EA. • The assessment concluded that due to the low permeability of rock at the Bioreactor site, the potential for seepage of leachate and contamination of soil to the regional groundwater system is low. • SCA raised concerns regarding leachate contamination potential with more permeable rock near Bioreactor's rim which is currently un-lined and requested clarification regarding stormwater management at the Crisps Creek IMF. • A number of public submissions also raised concern regarding the potential for the Project (including leachate and pest control spray) to adversely impact on local water quality (particularly groundwater bores).	• ensure discharge limits comply with section 120 of the POEO Act; • implement suitable erosion and sediment control measures on-site; • prepare and implement a Soil & Water Management Plan for the Landfill in consultation with OEH and NOW including a groundwater monitoring program; • prepare and implement a Leachate Management Plan

Issue	Assessment	Recommendation
	• In response, Veolia has committed to selectively lining the upper, more permeable layer of the Bioreactor rim (similar to the basal lining on the bottom) to stop the potential leaching of any contaminants into local water sources. • In addition, Veolia noted that all waste at the IMF is transported in sealed containers and managed in accordance with the existing Stormwater Management Scheme for the site. • Veolia's assessment concludes that all leachate would be contained within waste in the Bioreactor rather than requiring off-site disposal and would not have time to migrate to the regional groundwater system at Crisps Creek over the 50 year period in which it takes leachate to reach a benign state. • NOW highlighted the licensing obligations of Veolia under the *Water Act 1912* and requested a Leachate Management and Groundwater Monitoring Plan be prepared for the Project. • Leachate, surface and groundwater quality impacts would continue to be monitored and managed by Veolia's existing on-site operations. • The Department is satisfied that the potential soil and water impacts of the Project would be minor and has recommended a number of conditions of approval to formalise and build upon Veolia's existing management and monitoring practices.	for the Landfill in consultation with OEH and NOW; • prepare and implement Closure and Rehabilitation Management Plans for the Landfill in consultation with OEH; • ensure that there is no vehicle or container wash down at the Crisps Creek IMF; and • prepare and implement an Environmental Management Plan (EMP) for the Crisps Creek IMF including water management and monitoring measures.
Noise and Vibration (including rail)	• Cumulative operational noise emissions from the Bioreactor, the Woodlawn Wind Farm and the approved AWT are expected to meet the relevant OEH noise criteria at all residential receivers, other than at one residence owned by the Veolia (therefore considered 'Project related') where a minor exceedance was predicted under adverse weather conditions. • Similarly, road traffic noise emissions are also predicted to meet the relevant OEH noise criteria at all residential receivers. • OEH raised concerns that the road traffic noise assessment was not undertaken in strict accordance with OEH policy and requested an assessment of night-time road traffic noise. • However, the Department considers this issue to be minor and has recommended conditions requiring Veolia to comply with the relevant OEH noise criteria. Further, Veolia has indicated that no truck movements would occur during night-time hours. • OEH also requested the Department consider applying a cumulative noise criterion to the Project and all activities in the Woodlawn Eco-Precinct. • However, the Department considers that there is sufficient buffer distance between the Bioreactor, the Crisps Creek IMF (8km east), the approved AWT (1.2km north-west) and Woodlawn wind farm (~300m south) to be satisfied that cumulative noise impacts would be negligible. • Finally, OEH requested an assessment of rail noise which was also an issue of concern raised in public submissions (along with vibration) particularly in regards to the potential for classroom disruptions at local schools (e.g. DET) and effects of rail vibration on the structural integrity of nearby homes. • However, as noted in its RTS, Veolia on occasion run and currently have approval to unload 2 trains per day (as proposed), therefore, the Project is not expected to result in any significant rail noise or vibration impacts beyond the approved development or than currently experienced. • The Department is satisfied that the noise impacts of the Project would be negligible, however, has recommended conditions of approval to ensure all reasonable and feasible measures to minimise noise are implemented for the project.	• comply with the noise limits (including rail noise) and hours of operation specified in the Project approval; • prepare and implement a Noise Monitoring and Management Plan for the Landfill in consultation with OEH detailing details all reasonable and feasible measures to minimise noise; and • prepare and implement an Environmental Management Plan (EMP) for the Crisps Creek IMF including noise management and monitoring protocols.
Additional Considerations under the Infrastructure SEPP	• Under Clauses 123 (1b to d) of the Infrastructure SEPP, an approval authority for any new landfill is required to consider a number of other matters before determining a development application; • The Department has reviewed the EA, RTS and all other information provided by Veolia and is satisfied that the Bioreactor: – adopts best practice landfill design and operation (in particular, see section 2.5 of the EA); – reduces the long term impacts of the disposal of waste by minimising greenhouse gas emissions and maximising landfill gas capture (up to 92% and energy recovery); – is located so as to avoid land use conflicts (i.e. has a fairly	• N/A

Issue	Assessment	Recommendation
	generous buffer), is rehabilitating a degraded mine site, is consistent with the overall intent of the *Sydney Canberra Corridor Strategy* (see Appendix C) and the Department of Planning's *EIS Guideline: Landfilling* (1996); and – optimises transport links by utilising long-haul rail for transporting waste to the Bioreactor. • The Department is therefore satisfied that the Project is consistent with Clause 123 (b to d) of the Infrastructure SEPP.	
Air Quality (exc. odour)	• Annual average monthly dust deposition rates and annual average Total Suspended Particulate (TSP) concentrations at the Bioreactor are expected to comply with the relevant OEH criteria at all receivers. • Further, PM_{10} concentrations (24 hour average and annual average) at the Bioreactor are also expected to comply with the relevant OEH criteria at all receivers. • OEH requested further assessment to ensure the landfill gas engine (LGE) emissions comply with the *POEO (Clean Air) Regulation 2010*. • Veolia has confirmed this and the Department has incorporated the above requirement in the recommended conditions of approval. • Dust, TSP and PM_{10} concentrations would be negligible at the Crisps Creek IMF as all waste is transported in sealed containers on sealed roads and unloaded on a sealed hardstand area. • The Department is satisfied that the air quality impacts of the Project would be negligible.	• comply with the dust criteria specified in the Project approval; • ensure LGE emissions at the Bioreactor comply with the requirements of the *POEO (Clean Air) Regulation 2010;* and • prepare and implement an Air Quality and Greenhouse Gas Management Plan for the Landfill in consultation with OEH detailing the measures that would be implemented to manage the air quality and greenhouse gas impacts of the Project.
Greenhouse Gas Emissions	• The Project's total Greenhouse Gas Emissions (GHGs) are estimated to be 249kt TCO2-e per annum. • Scope 1 emissions from methane and fuel combustion make up 98% of these emissions at 244,249kt TCO2-e per annum. • The uncontrolled fugitive emission of methane from the surface of waste alone makes up 92% of the total estimated emissions. • Despite this, the Project would generate 210,240MWh of electricity per year at the Bioreactor through the capture of methane from the void through a sophisticated piping system. • This equates to approximately 24MW per hour of electricity generated from methane gas. This represents a GHG offset of approximately of 166,347 TCO2-e per annum or abatement of approximately 67% of the Project's total estimated GHG emissions. • The Department is satisfied that suitable measures are in place to minimise the carbon footprint of the Project.	• implement all reasonable and feasible measures to minimise energy use on site and greenhouse gas emissions; and • prepare and implement an Air Quality and Greenhouse Gas Management Plan for the Landfill in consultation with OEH detailing the measures that would be implemented to manage the greenhouse gas impacts of the Project.
Pests/Vermin	• A number of public submissions raised concern about the potential for increased pests and vermin (e.g. flies) as a result of the expansion of waste operations at the landfill site and associated amenity/health impacts. • In its RTS, Veolia indicated that an increase in pests and vermin is not expected as a result of the project and would be managed in accordance with existing mitigation measures already in place at the IMF and landfill sites. • The Department considers this to be a management issue for Veolia and has recommended conditions of approval to ensure the potential impacts of the project on amenity and public health from pests and vermin are effectively controlled at both sites.	• implement suitable measures to manage pests, vermin and declared noxious weeds on site; and • inspect the site on a regular basis to ensure that these measures are working effectively.
Hazards	• The main hazards associated with the Project include the potential for fire and explosion, due to ignition of methane gas generated by the landfill. • Veolia's preliminary risk assessment found that the Project would not introduce any new hazards to the site/s and is not likely to increase the severity of hazards associated with the operation of the landfill. • As such, the Project is considered 'not potentially hazardous' and SEPP 33 does not apply. • The Department has reviewed the Project and considers that the Project would not result in unacceptable off-site risks.	• N/A
Rehabilitation	• Rehabilitation of the site and its final landform will not be affected by the Project, rather, the Project would shorten the lifespan of the Bioreactor and bring forward the date for final site rehabilitation. • Options to address final landform and rehabilitation of the site are contained in detail within the existing Post Closure Landfill	• prepare and implement Closure and Rehabilitation Management Plans for the Landfill in consultation with OEH considering the changes associated with expanded

Issue	Assessment	Recommendation
	Rehabilitation Plan for the Bioreactor. • SCA requested clarification on the final landform height which was provided by Veolia in its RTS in the form of a detailed plan. • DII requested the Bioreactor site be removed from the existing mining lease area and the Department hold the guarantee for the rehabilitation of this land. • However, the Department has advised DII that this is beyond the power and remit of the Minister for Planning and Infrastructure under the EP&A Act.	operations.

6 CONCLUSION

The Department has assessed the merits of the Project having regard to the objects of the EP&A Act and the principles of ecologically sustainable development.

This assessment has concluded that with the implementation of the recommended conditions of approval, the potential impacts of the Project, such as odour, can be mitigated and/or managed to ensure an acceptable level of environmental performance.

Veolia has reviewed and generally accepts the imposition of these conditions.

Overall, the assessment has found that:
- The 1.13 million tpa capacity being sought is acceptable form an environmental perspective;
- The Project would assist in meeting the need for putrescible waste disposal capacity for Sydney's waste; and
- The project (the Woodlawn Bioreactor) is a critical piece of waste infrastructure to ensure Sydney's landfill security into the future.

Further, the Department has found that the Project has additional public benefits including rehabilitation of a degraded mine site, greenhouse gas capture and electricity generation. The Department considers the public benefits of the Project outway any potential impacts.

Consequently, the Department considers that the Woodlawn Expansion Project is in the public interest and should be approved, subject to conditions.

7 RECOMMENDATION

It is recommended that the Planning Assessment Commission:
- **consider** the findings and recommendations of this report;
- **approve** the Project application under section 75J of the EP&A Act; and
- **sign** the attached Project approval (refer Appendix B).

Felicity Greenway 22/12/11

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22.12.11

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APPENDIX A: SUMMARY OF CONDITIONS OF APPROVAL

Aspect	*Condition*	*Requirement*
Schedule 3: Administrative Conditions		
General Terms of Approval	1 - 4	Minimise harm to the environment and carry out Project in accordance with EA.
Limits of Approval	5 – 9	Limit waste to be accepted to 1.13 million tpa at the Landfill and 1.18 million tpa at the Crisps Creek IMF.
General Terms of Approval cont.	10 – 17	Ensure structural adequacy, surrender of existing development consents, protection public infrastructure, transitional arrangements, proper demolition, operation of plant equipment and staged submission of plans.
Schedule 4: Specific Environmental Conditions – Landfill Site		
Waste Management	1 – 3	Only receive waste permitted by an EPL, ensure all waste covered with VENM (or similar) and implement suitable measures to control litter.
Air	4 – 5	Ensure landfill gas emissions comply with POEO (Clean Air) Regulation, minimise greenhouse gas emissions and energy use on-site.
	6 – 9	Comply with section 129 of the POEO Act, commission an Independent Odour Audit for the Project and implement all mandatory odour controls/recommendations of the audit, prior to expanded operations.
	10	Comply with dust limits.
	11	Prepare and implement an Air Quality and Greenhouse Gas Management Plan for the Landfill.
Soil and Water	12 –15	Comply with section 120 of the POEO Act, minimise soil loss and erosion and bunds designed in accordance with relevant guidelines.
	16 – 17	Prepare and implement a Soil and Water and a Leachate Management Plan for the Landfill.
Noise	18 – 19	Comply with noise limits and hours of operation.
	20 – 21	Prepare and implement a Noise Monitoring and Management Plan for the Landfill and ensure a meteorological station is installed on-site.
Flora and Fauna	22 – 23	Prepare and implement a Landscaping and Vegetation Management Plan for the Landfill and ensure suitable measures in place to manage pests, vermin and noxious weeds.
Fire and Emergency Management	24	Prepare and implement a Fire and Emergency Plan Management Plan for the Landfill.
Visual Amenity	25	Ensure lighting complies with relevant Australian Standards.
Security	26	Ensure site is secure.
Landfill Closure and Rehabilitation	27 – 28	Prepare and implement a Closure and Rehabilitation Management Plan for the Landfill.
Schedule 5: Specific Environmental Conditions – Crisps Creek IMF Site		
Waste Management	1 – 4	Only receive waste permitted by an EPL, ensure contaminated sludges are disposed of at the Landfill, ensure all waste is appropriately transported in containers and not stored overnight.
	5 – 6	Implement suitable measures to control litter, pests, vermin and noxious weeds.
Air	7 – 9	Minimise greenhouse gas emissions and energy use on-site, comply with section 129 of the POEO Act and include IMF in Independent Odour Audit (as required under condition 7 in schedule 4).
Soil and Water	10 – 12	Comply with section 120 of the POEO Act, ensure no container wash down and on-site sewerage system is operated in accordance with the relevant guidelines/controls.
	13 – 14	Ensure bunds designed in accordance with relevant guidelines and minimise soil loss and erosion.
Noise	15 – 17	Comply with noise limits (including rail) and hours of operation.
Visual Amenity	18	Ensure lighting complies with relevant Australian Standards.
Security	19	Ensure site is secure.
Rail Traffic	20 – 21	Ensure only 2 train access the site a day and prepare and implement a Rail Transport Code of Conduct for the IMF.
Schedule 6: Traffic and Road Upgrades		
Traffic and Transport	1 – 3	Use specified routes to access the site/s at all times and prepare and implement a Transport Code of Conduct for the delivery of regional waste by road to the Landfill.
Road Upgrades (Palerang)	4 – 6	Conduct a safety analysis/audit of southern section of Bungendore/Tarago Road (Main Road 268), implement traffic management measures, provide and complete any mandatory road upgrades recommended by the audit, prior to expanded operations.

Road Upgrades (Goulburn)	7 - 8	Evaluate the suitability of the provision of a climbing lane or other suitable road upgrade alternative on Bungendore/Tarago Road (Main Road 268) between the Bioreactor and the IMF and provide the most suitable option to the satisfaction of Goulburn Mulwaree Council, prior to expanded operations.
Road Maintenance Contributions	9	Pay road maintenance contributions (per kilometre per tonne) for waste hauled along on municipal roads.
	10	Receive a reduction in road maintenance contributions paid based on the proportionate cost of forward funding road upgrades on Bungendore/Tarago Road (Main Road 268).
Schedule 7: Environmental Management, Reporting and Auditing		
Community Liaison Committee	1 – 2	Operate a Community Liaison Committee for the Project and establish members within 6 months of approval.
Environmental Management	3 – 4	Prepare and implement Environmental Management Plans for the Landfill and the Crisps Creek IMF.
Independent Environmental Audit	5 – 6	Undertake Annual Environmental Management Reviews and Triennial Independent Environmental Audits of the Project.
Access to Information	7 – 10	Report incidents, progressively revise plans, and make specific information on the Project publicly available on the Proponent's website
Appendix 1: Statement of Commitments		
Appendix 2: Site Layout		
Appendix 3: Final Landform		
Appendix 4: Truck Haulage Routes for Regional Waste		

APPENDIX B: CONDITIONS OF APPROVAL

APPENDIX C: CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy (Infrastructure) 2007

The Infrastructure SEPP generally aims to provide a consistent planning regime for infrastructure and the provision of services in NSW.

The Project is permissible with consent under Division 23 of the *State Environmental Planning Policy (Infrastructure) 2007* (the Infrastructure SEPP), as a waste or resource recovery facility that is located within an equivalent or prescribed zone.

Under Clause 123 of the Infrastructure SEPP, in determining a development application for development for the purpose of a landfill for the disposal of putrescible waste, the consent authority must take a number of matters into consideration.

The Department is satisfied that the matters for consideration under Clause 123 of the Infrastructure SEPP have been addressed in the detailed assessment of the Project (see section 5.1 of this report).

The Department is therefore satisfied that the Project is generally consistent with the Infrastructure SEPP.

State Environmental Planning Policy (Rural Lands) 2008

The Rural Lands SEPP generally aims to facilitate the orderly and economic use and development of rural lands for rural and related purposes and to protect state and regionally significant rural lands from inappropriate land use changes.

The Project is located in two local government areas in which this SEPP applies (i.e. Palerang and Goulburn Mulwaree).

The Project does not involve changing the use of land, rather an intensification of the current use at each site (i.e. at both the Bioreactor and the Crisps Creek IMF). The Department has assessed the proposal against the provisions of the Rural Lands SEPP and is satisfied that the viability and productivity of adjacent rural land holdings would not be affected/compromised by the Project (in particular, see 'soil and water' in section 5.4 of this report).

The Department is therefore satisfied that the Project is generally consistent with the Rural Lands SEPP.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

SEPP 33 aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/or offence (odour, noise etc). A development is defined as potentially hazardous and/or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/or offence impact, on off-site receptors. SEPP 33 requires that a PHA be carried out on a potentially hazardous development to ensure that any hazards are systematically evaluated as part of the overall environmental assessment.

The Project is defined as potentially hazardous development, therefore a PHA was carried out for the Project in accordance with the Department of Planning's *Hazardous Industry Planning Advisory Paper (HIPAP) No. 6* (*Guidelines for Hazard Analysis*).

The PHA identified the main hazards associated with the Project were fire and explosion (predominantly due to the potential ignition of methane gas) and general safety hazards.

The Department's Hazards Unit has reviewed the Project, the EA and the Preliminary Hazards Assessment prepared by Veolia and is satisfied that, subject to the implementation of hazard and risk mitigation measures and recommended conditions of approval, the Project will not significantly increase the off-site impacts, and is therefore consistent with SEPP 33.

State Environmental Planning Policy No. 55 – Remediation of Land

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The Bioreactor site is defined as contaminated land and consequently SEPP 55 applies to the Project.

Under SEPP 55, a consent authority must consider a range of contamination issues before it can grant consent to carry out development on a site.

The Department has reviewed all contamination issues associated with the Project and outlined in the EA. A detailed assessment of these issues is provided in Section 5 of this report (in particular, see 'soil and water' in section 5.4).

As above, the Project does not involve changing the use of land, rather an intensification of the current use at each site including the Bioreactor. The Project essentially relates to the rehabilitation of an old disused mine site by filing with putrescible waste. The site would be remediated in accordance with the approved Landfill Closure and Rehabilitation Management Plans for the Project, developed in consultation with the OEH and consistent with the relevant best practice guidelines/standards in NSW (see conditions 27 and 28 in schedule 4 of the Project approval).

The Department has reviewed the Project, the EA and all other supporting information and is satisfied that, subject to the implementation of the above recommended conditions of approval, the Project is consistent with SEPP 55.

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011

The Sydney Drinking Water Catchment SEPP aims to provide for healthy water catchments that deliver high quality water while permitting development that is compatible with that goal and to support the maintenance or achievement of the water quality objectives for the Sydney's drinking water catchment.

The Project is located on land within the Sydney drinking water catchment and therefore the Sydney Drinking Water Catchment SEPP applies to the Project.

Before development consent can be granted, a consent authority must be satisfied that the proposed development will have a neutral or beneficial effect on water quality in this catchment.

The above test was used in the assessment of the original development consent for the Woodlawn Bioreactor in 1999 in accordance with the now repealed *Drinking Water Catchments Regional Environmental Plan No. 1*. The assessment concluded that based on the further information and consultation with the OEH and the Sydney Catchment Authority, that the development would not adversely affect the catchment.

The Department has reviewed all water quality/catchment issues associated with the Project and outlined in the EA in consultation with the Sydney Catchment Authority. In their RTS, Veolia provided a detailed response to (and addressed) all issues raised by the SCA in their submission on the Project. An assessment of these issues is summarised in Section 5.4 of this report (see 'soil and water)'.

The Department is satisfied that the potential water quality/catchment impacts of the Project would be minor and has recommended a number of conditions of approval to formalise and build upon Veolia's existing management and monitoring practices. Accordingly, the Department is satisfied that the Project is generally consistent with the Sydney Drinking Water Catchment SEPP.

Sydney Canberra Corridor Regional Strategy

The Sydney Canberra Corridor Regional Strategy aims to accommodate and manage growth while ensuring that the rural landscapes and environmental settings of the region are not compromised. The strategy also seeks to ensure that land is appropriately located to sustainably accommodate Projected population growth, housing, employment and environmental needs over the period until 2031.

The Sydney Canberra Corridor Regional Strategy applies to the local government areas of Wingecarribee, Goulburn Mulwaree, Upper Lachlan, Yass Valley, Palerang and Queanbeyan. The strategy therefore applies to the Project site.

The Project involves a continuation of the current uses at both sites (i.e. the Bioreactor and the Crisps Creek IMF) which are significant industrial sites specifically zoned for industrial purposes.

The Department has considered the aims of the strategy in its assessment of the Project and is satisfied that, subject to the implementation of mitigation measures and recommended conditions of approval, the Project would allow sustained growth of a significant generator of local employment without compromising the environmental or rural values and character of the region.

The Department is therefore satisfied that the proposal is consistent with the overall intent of this strategy.

Goulburn Mulwaree Local Environmental Plan 2009

Goulburn Mulwaree LEP 2009 generally aims to promote and co-ordinate the orderly and economic use and sustainable development of land in the local government area.

Most of the existing Woodlawn Bioreactor is zoned IN3 Heavy Industrial under the Goulburn Mulwaree LEP 2009, while a small portion of the site is zoned General Rural under the *Mulwaree Local Environmental Plan 1995* (see below). The Project is permissible with development consent in these zones as a waste disposal facility.

The Crisps Creek IMF is zoned RU2 Rural Landscape under the Goulburn Mulwaree LEP 2009, and is permissible with development consent as a waste or resource transfer station.

Notwithstanding, (as above) the Project is permissible with consent on both sites under Division 23 of the Infrastructure SEPP, as a waste or resource recovery facility that is located within an equivalent or prescribed zone.

The general objectives of the IN3 zone are to encourage employment opportunities, encourage suitable separation of industry and other land uses and to minimise the adverse effect of heavy industry on other land uses.

The general objectives of the RU2 zone are to maintain the rural landscape character of the land, provide for a range of compatible land uses, to protect and enhance the water quality of receiving watercourses and groundwater systems and reduce their degradation (including catchment areas), and to minimise the potential for conflict between adjoining land uses.

In its assessment, the Department has considered the Project against the relevant objectives of the Goulburn Mulwaree LEP 2009 and is satisfied that the Project would not affect water quality in the LGA, would increase employment opportunities and ensure that a heavy industrial land use continues on land that is suitably zoned for this purpose, therefore minimising the potential for land use conflict.

The Department is therefore satisfied that the Project is consistent with Goulburn Mulwaree LEP 2009.

Mulwaree Local Environmental Plan 1995

Mulwaree LEP 1995 generally aims to encourage the proper management, development and conservation of natural and man-made resources within the Mulwaree area.

As above, a small portion of the Bioreactor site is zoned General Rural under Mulwaree LEP 1995. The Project is permissible with development consent in this zone as a waste disposal facility. Additionally, the proposal is permissible under Division 23 of the Infrastructure SEPP, as a waste or resource recovery facility that is located within an equivalent or prescribed zone.

The general objectives of the General Rural zone are to conserve prime agricultural land, environmentally sensitive areas, water resources and catchments while minimising costs to the community through fragmented development of rural land.

The Department is satisfied that the Project would not impact on any prime agricultural land, would not affect water quality in the LGA, would increase employment opportunities and ensure that a heavy industrial land use continues on land that is suitably zoned for this purpose, therefore not resulting in fragmented development of rural land.

The Department is therefore satisfied that the Project is also consistent with the relevant aims and objectives of Mulwaree LEP 1995.

APPENDIX D: SUBMISSIONS

APPENDIX E: RESPONSE TO SUBMISSIONS

APPENDIX F: ENVIRONMENTAL ASSESSMENT

APPENDIX G: INDEPENDENT ADVICE