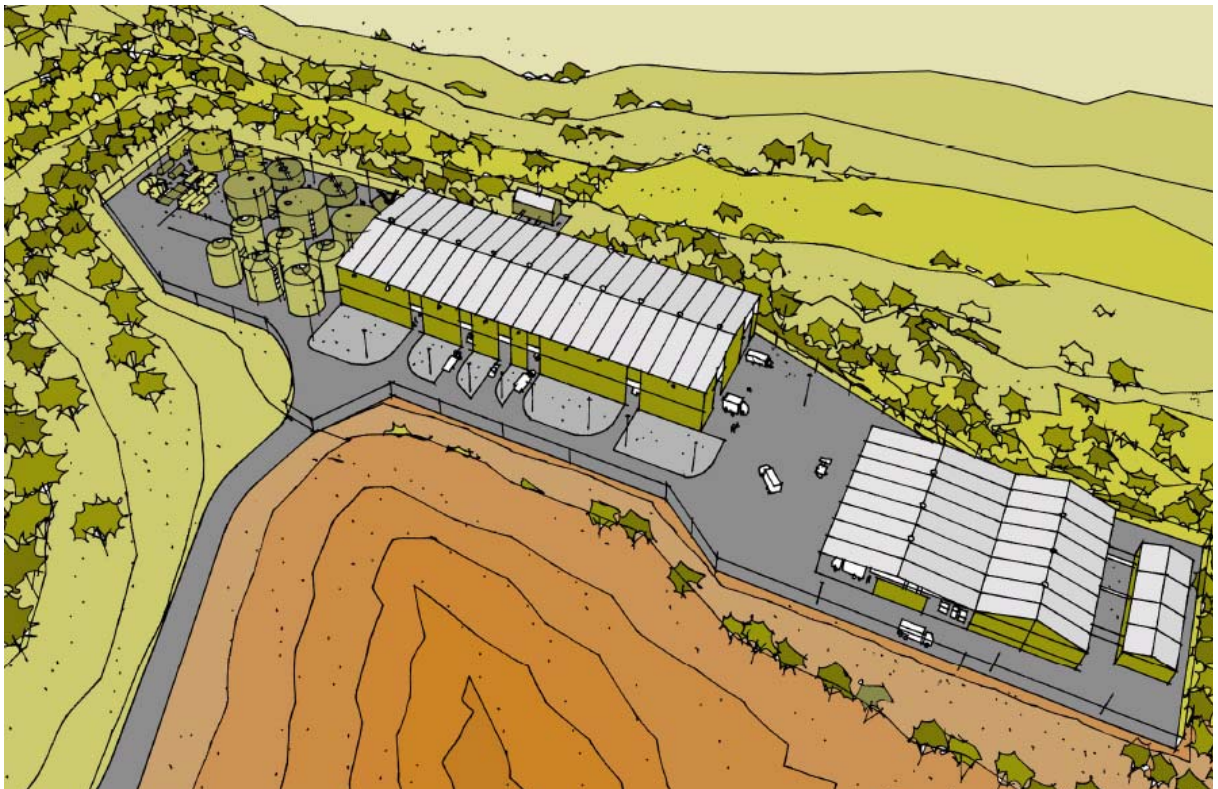




NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT: WSN Alternative Waste Technology Facility, Jacks Gully



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

August 2006

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Published August 2006
NSW Department of Planning
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1. EXECUTIVE SUMMARY

WSN Environmental Solutions (WSN) has operated the Jacks Gully waste management facility in the Camden LGA since 1974. This facility is now one of the largest waste management facilities in the Sydney Metropolitan Region, handling approximately 250,000 tonnes of putrescible and dry waste a year.

However, residential development is gradually encroaching on the waste management facility, and the Spring Farm area adjoining the facility was recently rezoned for residential development.

To minimise the potential land use conflicts between the waste management facility and the new residential area, WSN proposes to establish an Alternative Waste Technology (AWT) facility at the existing waste management facility. This facility would process up to 120,000 tonnes of solid and organic waste a year, reduce the amount of waste currently going to landfill at the facility, and produce compost and at up to 2MW of "green" electricity a year.

The proposal has a capital investment value of \$39 million, and would employ up to 50 workers during construction and 40 workers during operation.

During the exhibition period, the Department received 7 submissions on the proposal: 6 from government authorities and 1 from a member of the general public. While only one of these submissions objected to the proposal, some of the other submissions raised concerns about the potential odour, dust, noise and traffic impacts of the proposal.

The Department has assessed these concerns in detail (see section 6 of this report), and is satisfied that the proposal can comply with all the relevant environmental criteria, that the site is suitable for the proposed development, and that the proposal is generally in the public interest. Consequently, it believes it should be approved subject to conditions.

2. BACKGROUND

WSN has operated the Jacks Gully waste management facility in the Camden LGA since 1974 (refer to Figure 1). This facility is now one of the largest waste management facilities in the Sydney Metropolitan Region, handling approximately 250,000 tonnes of putrescible and dry waste a year.

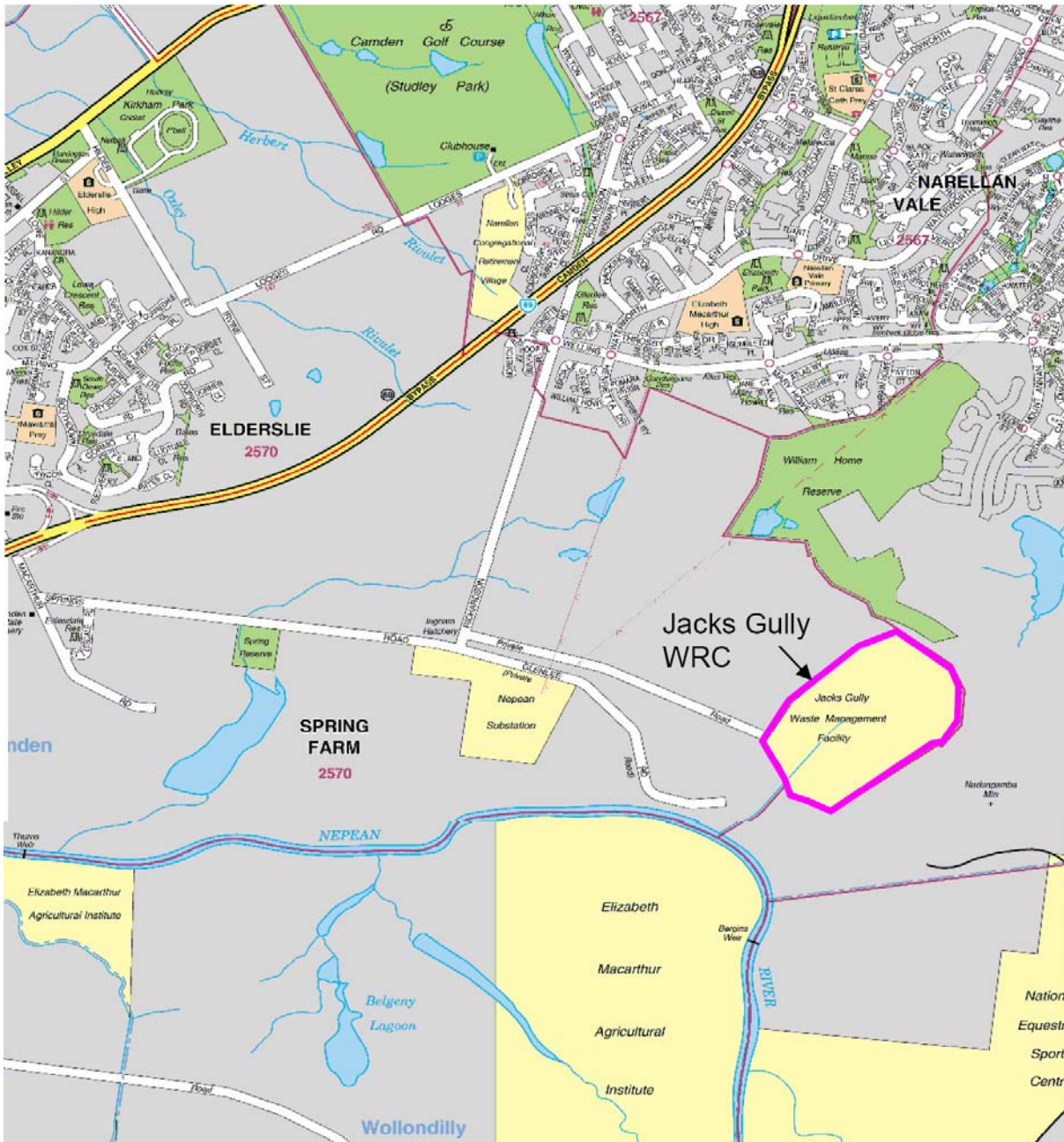


Figure 1: Site Location

Residential development is gradually encroaching on the waste management facility, and the Spring Farm area adjoining the northern boundary of the facility was recently rezoned for residential development (see Figure 2).

Landcom and a number of other landowners are proposing to develop the Spring Farm area over the next few years. To reduce the dust, noise and odour impacts of the waste management facility, Landcom and WSN have entered into a commercial agreement. Under this agreement, WSN is required to cease all putrescible waste landfill operations at the waste management facility by 2007.

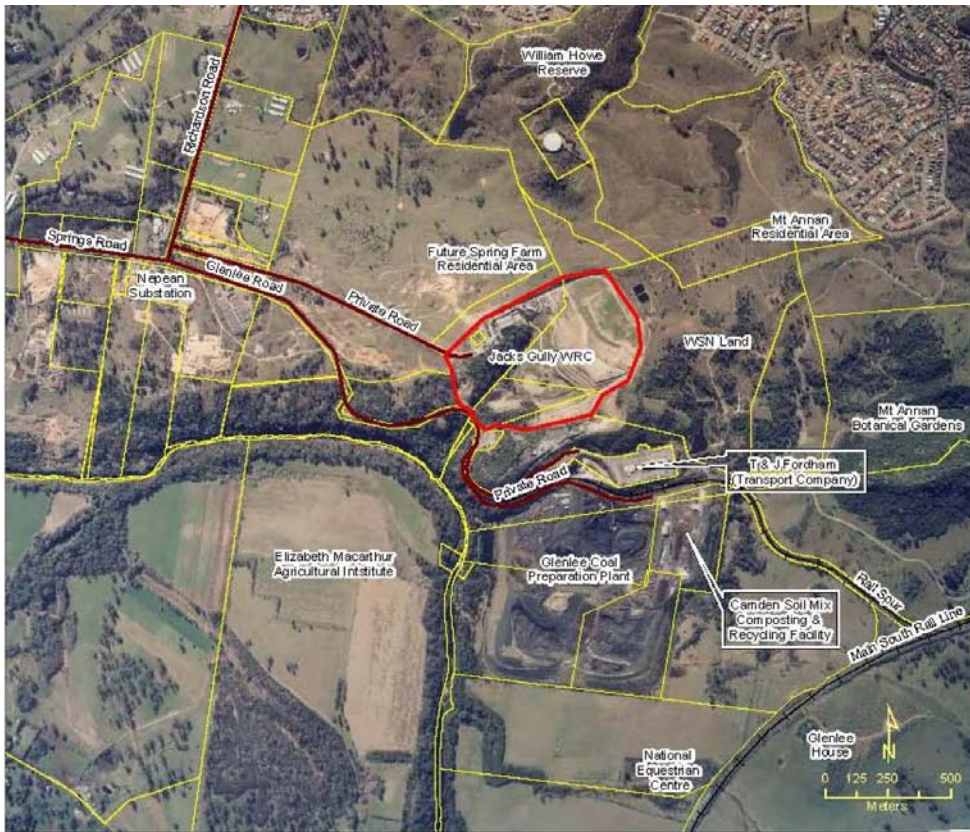


Figure 2: Existing Land Uses

To enable this to occur, WSN proposes to establish a new Alternative Waste Technology (AWT) facility on the site (see Figure 3). This facility would be able to process up to 90,000 tonnes of solid waste and 30,000 tonnes of organic waste a year.



Figure 3: Site Layout

3. PROPOSED DEVELOPMENT

The major components of the proposal are outlined in Table 1, and an artist's impression of the facility is shown on the cover of this report.

Table 1: Major Components of the Proposal

Component	Description
ArrowBio Plant	Construction of a 15 metre high building with an area of 5,980m ² . This ArrowBio Plant building would receive and process solid municipal waste. Receival areas would be fully enclosed and operate under negative pressure. The building would be clad in steel sheeting.
Garden Organics Plant	Construction of a 10 metre high building with an area of 4,200m ² . This Garden Organics Plant would accommodate 12 fully enclosed composting tunnels for the processing of organic waste. The building would be clad in steel sheeting.
Tank farm, biogas storage and flare	Installation of approximately 11 storage tanks including digester tanks, water tanks and a biogas storage tank.
Electricity Generators	Installation of 2 generators capable of producing 2MW of electricity from the biogas produced at the facility. These would be located within the tank storage area, and associated transformers and switchrooms.
Roads, paving and earthworks	Paving of all high traffic areas with concrete. Non-operational areas would be covered with gravel. The on-site access road would be sealed with asphaltic concrete.
Bulk earthworks	Compacted fill would be used to extend the existing rock shelf in the south of the site to accommodate the AWT Facility. Batters would be formed around the edges of the platform to engineering standards.

Essentially, solid and garden organic wastes would be received by road at the facility. The solid waste would be taken to the ArrowBio Plant, where it would be manually sorted, immersed in water, and separated into organic and inorganic waste. The organic waste would be converted into sludge for treatment, biogas extraction, and application to land, while the inorganic waste would be disposed of as non-putrescible waste at the existing landfill on the site. The garden organic waste would be taken to the Garden Organics Plant, where it would be sorted, shredded, mixed, composted within enclosed tunnels, refined and transported to markets off the site by road.

The outputs from the proposed AWT facility, and their destination following processing, are provided in Table 2.

Table 2: Outputs from the proposed facility

Output	Volume (tpa)	Destination
Recovered recyclables	19,170	Recycled at existing site facility
Compost	18,300	Sent from site for resale
Stabilised sludge	17,370	Disposed of to landfill on site / applied to land as soil conditioner if appropriate
Water	11,700	Treated and re-used on site
Biogas	4,320	Used in on-site power generation
CO ₂ and Moisture loss (to the atmosphere)	25,500	N/A
Non-putrescible residuals	23,640	Disposed of to landfill on site
Total	120,000	See above

The proposal has a capital investment value of \$39 million, and would employ up to 50 workers during construction and 40 workers during operations.

WSN submitted an environmental assessment of the proposal to the Department on 24 April 2006 (see Appendix E).

4. STATUTORY CONTEXT

4.1 Major Project

The proposal is classified as a Major Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) as it complies with the criteria in Schedule 1 of the *State Environmental Planning Policy (Major Projects) 2005*, being a development for the purpose of a resource recovery or recycling facility that would handle more than 75,000 tonnes per year of waste. Consequently, the Minister is the approval authority for the project.

4.2 Permissibility

The site is zoned 5(a) Special Uses (Waste Management Centre) under the *Camden Local Environmental Plan No. 48*, and the proposal is permissible with development consent in this zone.

4.3 Exhibition

The environmental assessment of the proposal was exhibited from 26 April 2006 until 26 May 2006, which satisfies the requirements for public consultation in Section 75H of the EP&A Act.

4.4 Environmental Planning Instruments

Under Section 75I(2) of the EP&A Act, the Director-General's report on this project is required to include a copy of or reference to the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project.

The Department is generally satisfied that there are no SEPPs that substantially govern the carrying out of this project, but has assessed the proposal against the relevant provisions of the following planning instruments (see Appendix F):

- *State Environmental Planning Policy No 55 – Remediation of Contaminated Land*;
- *State Environmental Planning Policy No 33 – Hazardous and Offensive Development*;
- *State Environmental Planning Policy No 11 – Traffic Generating Developments*;
- *Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No.2 – 1997)*; and
- *Camden Local Environmental Plan No. 48*.

This assessment concludes that the proposal is not inconsistent with the aims, objectives and requirements of these instruments.

5. ISSUES RAISED DURING CONSULTATION

During the exhibition period, the Department received 7 submissions on the proposal (see Appendix D for a copy of these submissions): 6 from public authorities (Department of Environment and Conservation, Department of Natural Resources, Roads and Traffic Authority, Mine Subsidence Board, Camden Council, and Landcom), and 1 from the general public.

The DEC, DNR, RTA and Mine Subsidence Board raised no objections to the proposal, and provided their recommended conditions of approval. While none of the 3 remaining submissions formally objected to the proposal, they raised concerns about the odour, noise, dust and traffic impacts of the proposal.

WSN has subsequently met with Council and Landcom to try and resolve these concerns, and provided a formal response to the issues raised in all the submissions (see Appendix D).

6. ASSESSMENT OF ENVIRONMENTAL IMPACTS

6.1 Air Quality

Dust - Construction

The construction of the proposal involves significant earthworks, and would generate traffic movements along unsealed roads. Furthermore, the 6-15 month construction phase would occur

concurrently with the ongoing operations of the existing waste management facility on the site, which would also generate dust emissions.

WSN proposes to implement several mitigation measures to minimise dust emissions during construction. These measures include extensive watering of disturbed and unsealed areas, the maintenance of vegetation cover wherever possible, timing of excavation works during periods of favourable weather conditions, and the use of dust suppressant chemicals if required. With these measures in place, the proposal is predicted to comply with the relevant DEC criteria (see Table 3).

Table 3: Predicted Air Quality Impacts During Construction (up to 15 months)

Pollutant	Averaging Period	DEC Criteria	Predicted
PM10 (μm^3)	1-day	50	48
Deposited Dust ($\text{g}/\text{m}^2/\text{month}$)	Annual	4	3.5

Both the DEC and the Department are satisfied with this assessment, and the proposed mitigation measures. Nevertheless, the Department believes WSN should be required to keep dust emissions to a minimum during construction.

Dust - Operation

The proposal is not expected to generate significant dust emissions as all trafficable areas on the site, including the internal access road, would be sealed; and all unloading and processing of waste at the facility would take place undercover. In fact, by reducing the amount of waste going to landfill at the facility each year, the proposal is likely to reduce the dust emissions of the waste management centre as a whole, and thereby improve the general amenity of the area. Nevertheless, the Department believes WSN should be required to keep dust emissions to a minimum during operations, and ensure that all trucks entering or leaving the facility with loads are covered at all times.

Odour - Construction

Most of the proposed works would be located on a new platform away from the existing landfill area. However, there is a chance that some of these works may disturb a small part of the old landfill, and generate odour impacts. In the event that this occurs, WSN has committed to stabilising and capping the disturbed area as quickly as possible after exposure. The Department is satisfied that the risk of exposing waste during the proposed construction works is low, and that the response measures proposed by WSN are appropriate.

Odour - Operation

The proposed AWT facility would receive organic and putrescible waste which may generate odour emissions. However, this waste would be processed within enclosed areas, and the emissions generated by this processing would be vented through a biofilter. The predicted sources of odour at the facility are shown in Table 4.

Table 4: Predicted Odour Sources and Emissions during Operation

Source	Emission Rate (OU/m ³)
Solids filter press	0.4
Storage bins	0.4
Organics delivery bays	0.2
Organics pre-treatment area	0.2
Biosolids delivery area	0.043
Product storage	0.018

While the main organics receipt and storage areas would not be enclosed and could generate odour emissions, WSN has agreed to ensure that no waste is left unprocessed or exposed at either of these areas overnight or on weekends, and to wash both of these areas daily. This should minimise the potential for odour impacts from these areas.

The DEC's draft *Assessment and Management of Odour from Stationary Sources in NSW* specifies odour performance criteria of 2 OU/m³ for developments with a large number of residences within close proximity to the site. Given that the proposed Spring Farm area is likely to come within 70 metres of the site's boundary, this criterion is considered appropriate. WSN's assessment indicated

that the proposed facility would not exceed the 2OU/m³ goal in any existing or proposed residential areas, nor the 7 OU/m³ goal at any of the office buildings in the industrial area to the south of the site (refer to Figure 4).

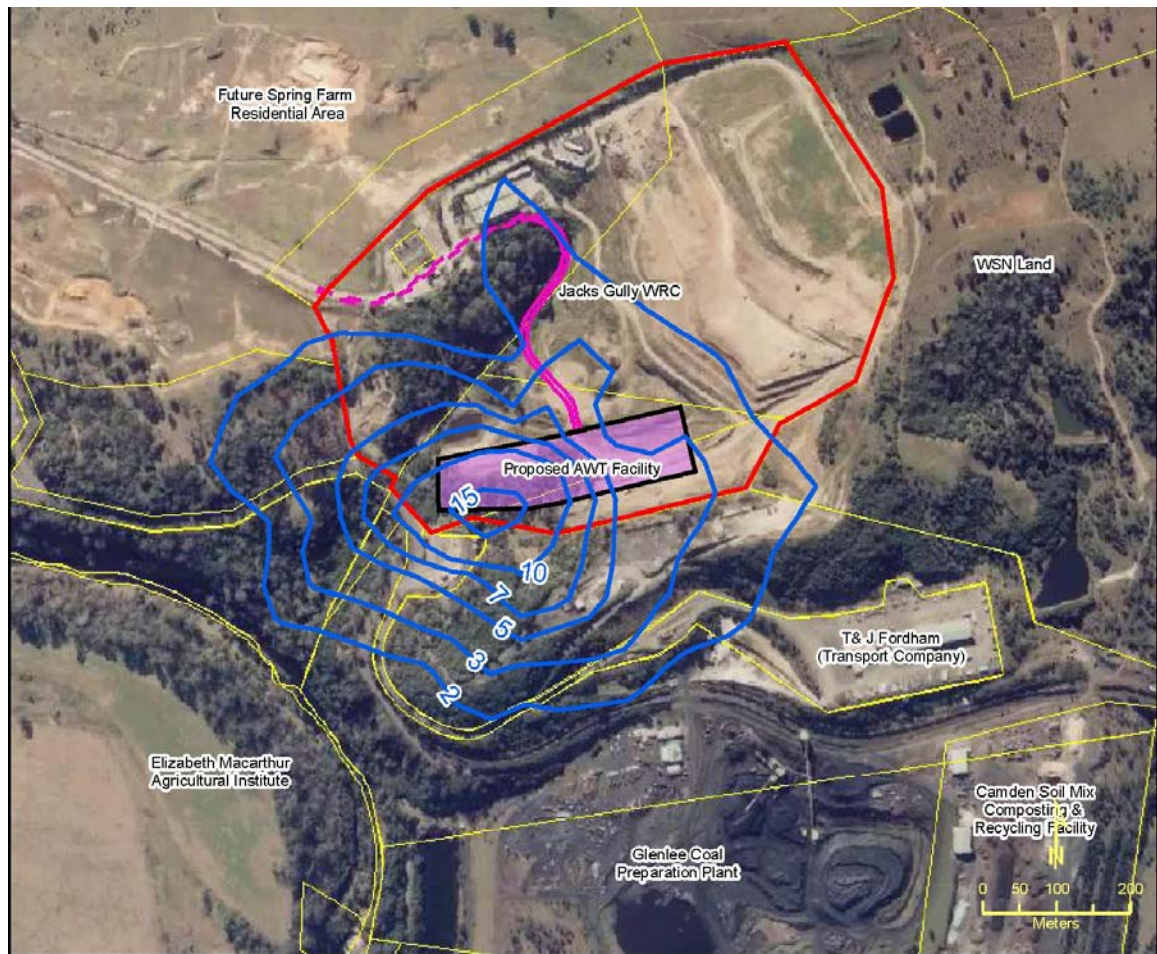


Figure 4: Predicted Odour (OU, 99th percentile) from the proposed facility

In addition, by reducing the amount of solid and organic waste currently going to landfill at the existing waste management facility, the proposal is likely to reduce the existing odour impacts of the facility and thereby minimise the potential for land use conflicts between the facility and the proposed residential areas adjoining the site.

Both the DEC and the Department are satisfied that WSN has adequately assessed the potential odour impacts of the proposal.

Given that there is likely to be residential development within 70m of the boundary of the site, the DEC recommended that WSN be required to ensure that there are **no offensive odour emissions beyond the boundary of the site at any time**. This has been incorporated into the recommended conditions of approval, which also:

- limit the amount of waste that is allowed to be received at the site at any time (to prevent long term storage of unprocessed waste),
- require WSN to characterise all organic outputs to make sure they are suitable for land application, and
- require WSN to prepare an ongoing odour monitoring program for the facility in consultation with the DEC.

Both the Department and the DEC are satisfied that the recommended conditions, together with the proposed mitigating measures, would ensure that the odour impacts associated with the operation of the proposed AWT facility are acceptable.

6.2 Noise

Construction Noise

Construction works are scheduled to take 12-15 months, with the bulk earthworks taking 6-8 months.

Since these construction works are likely to coincide with the initial construction works in the Spring Farm urban release area, the closest sensitive receivers to the construction works would be the existing residences at Mount Annan and Henrietta Drive.

Construction noise levels from the proposal are predicted to be around 18dBA at the Mount Annan residences and 32dBA at the Henrietta Drive residences, which is well below the daytime criteria at these residences of 39dBA.

Consequently, the Department is satisfied that the proposal is unlikely to generate any significant noise impacts during construction. Nevertheless, it believes WSN should be required to:

- restrict its construction works to daytime hours; and
- prepare a noise management plan as part of its construction environmental management plan to ensure the proposal's construction noise impacts are kept to a minimum.

Operational Noise

The environmental assessment includes a detailed noise impact assessment of the proposal. This assessment has been prepared in accordance with the requirements in the NSW Industrial Noise Policy, and considers the potential noise impacts of the proposal on its own, and the cumulative impacts of the proposal and all the other activities at the Jacks Gully waste management centre.

The results of this assessment are summarised in Tables 5 & 6 below.

Table 5: Predicted Daytime ($L_{Aeq(15\text{ minute})}$) Noise Impacts (dB(A)) with Mitigation Measures in Place

Location	DEC Criteria	AWT Facility	Total – No AWT	Total With AWT	Total With AWT & Further Mitigation
Henrietta Drive	39	22	34	32	31
Tea Tree Place	39	10	27	23	22
Cotula Place	39	10	29	22	22
Glenlee House	39	10	20	18	18
Spring Farm Adjacent	39	30	<59	<52	<49
Spring Farm Middle	39	29	42	42	39
Spring Farm Access Road	39	28	49	49	44
Mount Annan Adjacent	39	12	33	33	26

Table 6: Predicted Night-time ($L_{Aeq(15\text{ minute})}$) Noise Impacts (dB(A)) with Mitigation Measures in Place

Location	DEC Criteria	AWT Facility (Adverse)	Total – No AWT (Adverse)	Total With AWT (Neutral)	Total With AWT & Further Mitigation (Neutral)
Henrietta Drive	35	21	26	22	22
Tea Tree Place	35	10	16	11	<10
Cotula Place	35	10	19	14	12
Glenlee House	35	10	13	<10	<10
Spring Farm Adjacent	35	<28	<48	<47	<39
Spring Farm Middle	35	27	36	32	30
Spring Farm Access Road	35	23	44	43	38
Mount Annan Adjacent	35	12	17	13	13

Essentially, the assessment concludes that the proposal would:

- **comply with all the relevant DEC noise criteria** under both neutral and adverse weather conditions;
- substantially reduce the noise impacts of the waste management facility as a whole by as much as 7dBA in some locations during the day;
- marginally increase the noise impacts of the waste management facility as a whole by up to 2dBA in some locations during the night, however these increases are due to the fact that very few activities are currently carried out at the facility at night, and it is important to recognise that these increase **would not result in any exceedances of DEC's noise criteria**.

Consequently, the Department is satisfied that the proposal on its own is unlikely to generate any significant noise impacts on the existing or proposed residential areas surrounding the site.

Notwithstanding the fact that the proposal would essentially reduce the existing noise impacts of the Jacks Gully waste management facility as a whole, both Landcom and Council complained that the facility would still generate significant noise impacts are large parts of the Spring Farm urban release area.

While this concern is not strictly relevant to any assessment of the proposed AWT facility, WSN has nonetheless agreed to implement a range of measures to address both Landcom and Council's concern. These measures include:

- increasing the height of the existing noise bund at the facility from 4 to 6 metres;
- installing mufflers (or other noise controls) on the gas engine and other plant at the landfill; and
- prohibiting truck access to the site between 10pm and 7am (as opposed to the current hours of 10pm to 5am).

These measures are predicted to substantially reduce the noise generated by the waste centre as a whole (see the final column of Tables 5 & 6), even though there would continue to be some exceedances of the DEC's noise criteria in the Spring Farm urban release area.

The Department supports the implementation of these measures, and has reflected WSN's commitments in the recommended conditions of consent. Th has also recommended that WSN be required to:

- ensure that the proposed AWT facility complies with the DEC's noise criteria; and
- monitor the noise impacts of the proposed T facility to ensure compliance.

Traffic Noise

During construction and operations, the proposal is predicted to increase traffic noise levels on the construction traffic route by no more than 1 dB(A), which is well within the DEC's allowable noise limits for road traffic noise. Nevertheless, the Department believes WSN should be required to prepare a Traffic Noise Management Plan for the proposal to ensure that traffic noise impacts on existing and future residents in the area are kept to a minimum.

6.3 Traffic Management

Construction

Construction works are scheduled to take between 12-15 months. During this period, the proposal is expected to generate up to 260 vehicle movements a day (see Table 7), including 200 truck movements.

Table 7: Vehicle Movements during Construction

Component	AM Peak (trips/hour)	PM peak (trips/hour)	Daily (trips/day)
Light Vehicles	24	24	60
Heavy Vehicles	40	40	200
Total	64	64	260

Because Springs Road is scheduled to be closed between January and September 2007 (to facilitate the development of the Springs Farm urban release area), the traffic assessment in the environmental assessment assumes that all construction traffic would use Richardson Road. This is essentially a worst case scenario, as more vehicles are likely to use Springs Road (rather than Richardson Road) if it was open.

Nevertheless, the traffic assessment concludes Richardson Road is capable of accommodating the predicted construction traffic with minimal impact on the surrounding network.

While the RTA has concurs with this assessment, the Department believes WSN should be required to prepare a Traffic Management Plan for the construction works to ensure that any traffic impacts are kept to a minimum.

Operation

During operations, the proposal is predicted to increase the traffic generated by the waste management centre as a whole by up to 60 vehicles a day to 660 vehicles (see Table 8). However, nearly all of these vehicles would be light vehicles as they would be generated by the 40 new employees at the centre.

In fact, the proposal is predicted to reduce the truck traffic generated by the centre by up to 10 trucks a day, or 3,500 truck trips a year.

Consequently, the traffic generated by the centre as a whole is likely to remain much the same as it currently is once the proposal is up and running.

Table 8: Vehicle Movements during Operation

Component	Existing Peak (trips/hr)	Future Peak (trips/hr)	Existing Daily (trips/hr)	Future Daily (trips/day)
Employee Vehicles	13	41	36	116
Customer Vehicles	26	26		256
Heavy Vehicles	32	30	570	288
Total	71	26	606	660

In the short term (until 2009/10), this traffic would use Springs Road (75% heavy vehicles and 50% light vehicles) and Richardson Road (25% heavy vehicles and 50% light vehicles), the existing collector roads in the area (see Figures 1 and 5). This is generally a continuation of existing operations, and both roads are capable of accommodating the predicted traffic safely.

However, by 2009/10 a new arterial road is proposed to be built to the north and east of the site during the proposed development of the Spring Farm release area (see Figure 5).

Under the existing commercial agreement between WSN and Landcom, Landcom is required to construct a new access road linking the waste management facility to the new arterial road.

Once the arterial and access roads are operational, all the traffic from the waste management facility would use these roads instead of Springs Road and Richardson Road. This should reduce the traffic impacts of the proposal, as the arterial road would be designed to a higher standard than either of the existing collector roads.

In its submission, Landcom suggested that WSN should be required to contribute to the cost of constructing the proposed arterial road, since the proposal would prolong the life of the existing landfill, and WSN would benefit from the use of the new arterial road. However, the Department does not believe that this is justified given that the proposal would not significantly increase the traffic impacts of the approved operations at the waste management facility. In addition, it notes that this would be contrary to the existing agreement between WSN and Landcom for the funding of the proposed arterial road.

In its submission, Council argued that WSN should be required to contribute to the maintenance of the local roads that it would use in the area.

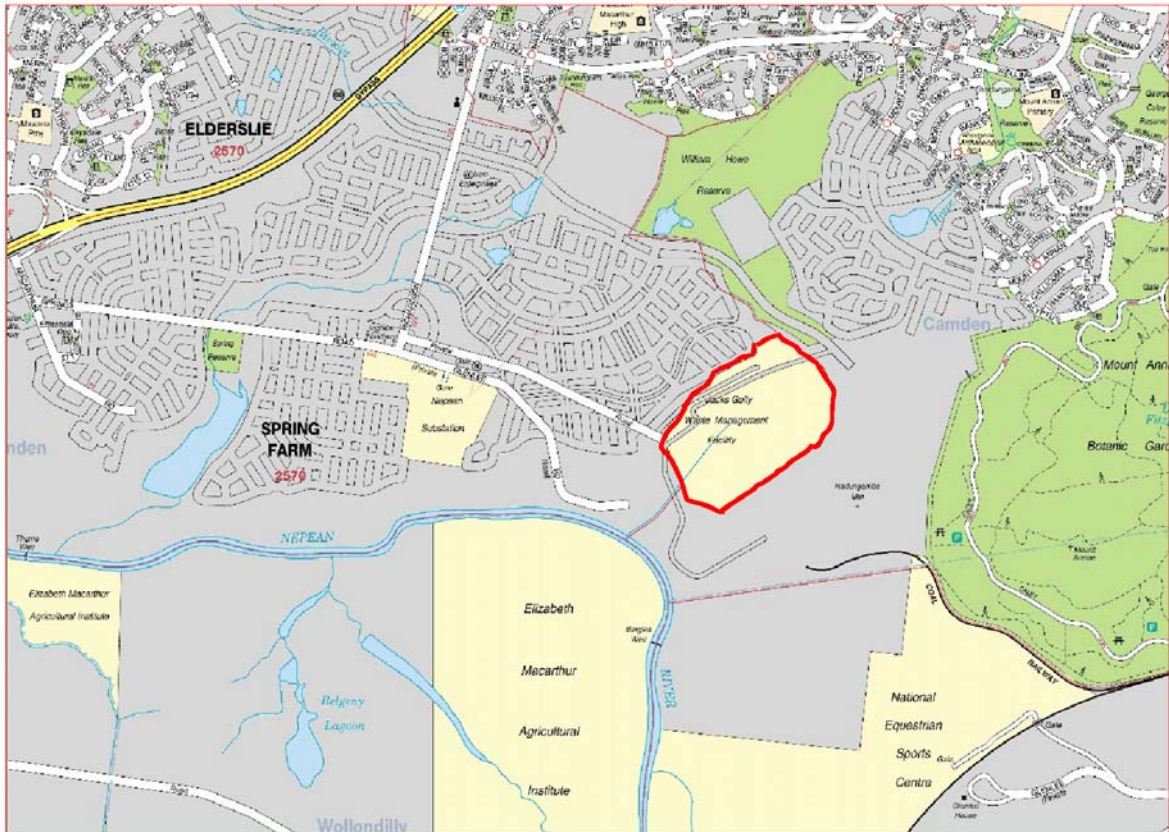


Figure 5: The Jacks Gully Waste Management Centre & Proposed Spring Farm Urban Release Area

Initially, WSN argued that it should not have to pay these contributions as:

- Council does not have a Section 94 plan requiring such contributions;
- the proposal would not increase the existing traffic levels of the waste management centre by much, and there was therefore no nexus between the proposal's impacts and Council's request; and
- it had already agreed to pay the 4 MACROC Councils whose waste it would receive a "foundation payment" for any deliveries it received from commercial or out-of-region councils.

After reviewing these arguments carefully, the Department concluded that:

- the only reason why WSN was not currently paying any road maintenance contributions for its existing operations was because its planning approval for these operations predate the EP&A Act, and consequently the whole Section 94 regime which is commonly used to require such contributions;
- the traffic generated by the proposal (including the trucks that would formerly have gone to the landfill) would have an impact on the local road network, and increase the demand for road maintenance; and
- the "foundation payment" WSN referred to would only apply to a small proportion of the total traffic generated by the facility.

Consequently, it determined that WSN should make a reasonable contribution for the maintenance of the local road network.

WSN has agreed to do this, and has commissioned further work to determine what a reasonable amount would be.

This work has concluded that WSN should be required to pay \$13,194 a year to Council while it is using Springs Road and Richardson Road, and \$5,124 a year once it starts using the new arterial road to the north of the site (in about 2010).

Both the Department and Council are satisfied with this estimate, which has consequently been incorporated as a requirement into the recommended conditions of consent.

6.4 Waste Management

There is potential for non-recyclable waste to be received at the site, as well as for excessive amounts of waste (beyond the storage capacity of the site).

While both the DEC and the Department are satisfied that these potential impacts can either be avoided or suitably managed, the Department believes that WSN should be required to:

- minimise the amount of non-recyclable waste received on the site;
- transport any excess waste to another facility for processing;
- demonstrate to the DEC that the organic outputs (such as compost) of the facility are suitable for the application to land; and
- ensure that only non-putrescible waste is landfilled at the waste management facility.

6.5 Wastewater Management

The proposal would generate up to 40kL of waste water a day, which would be stored in a process water storage dam on site, and “dirty” stormwater from the hardstand areas at the facility. The facility would be fully bunded, and this stormwater would be collected and stored in tanks or the site stormwater dam before it is reused on site. Any excess water would be discharged to trade waste or taken to WSN's other sites (Lucas Heights, Eastern Creek or Belrose) for further treatment.

Although it is generally satisfied with the proposed water management system on site, the DEC recommends that WSN be required to:

- bund the AWT facility, and direct runoff to a first flush system;
- keep process wastewater separate from stormwater in suitable tanks, which are designed in accordance with DEC guidelines; and
- only reuse wastewater on or off site with the express approval of the DEC.

These conditions have been incorporated into the recommended conditions of approval. The Department is satisfied that these conditions are sufficient to regulate the potential wastewater impacts of the proposal.

6.6 Vegetation Management

The proposal would result in the removal of 0.4 ha of native vegetation from the site. WSN proposes to offset the loss of this vegetation with landscaping on the site. The Department is generally satisfied that this landscaping would adequately offset the loss of this vegetation, but believes WSN should be required to prepare a detailed Vegetation Management Plan for the site.

All other issues are considered to be minor, and have been addressed as part of WSN's Statement of Commitments (refer to Appendix B).

7. CONCLUSION

The Department has assessed the EA, submissions on the proposal, and WSN's response to submissions in accordance with the requirements of Clause 8B of the *Environmental Planning and Assessment Regulation 2000*.

This assessment has concluded that the dust, odour, noise, traffic and other impacts of the proposal can be mitigated and/or managed to ensure an acceptable level of environmental performance.

It has also concluded that the proposal offers a number of benefits, as it would:

- ensure that no more putrescible waste is landfilled at the facility;
- produce compost and other recyclables from waste material that is currently being landfilled;
- produce up to 2MW of “green” electricity a year, which would reduce the greenhouse gas emissions of NSW power stations by as much as 23,000 tonnes a year;
- attract investment of around \$39 million to Sydney;
- create up to 40 new jobs; and
- facilitate the development of the Spring Farm urban release area by reducing the dust, odour, and noise impacts of the existing waste management facility.

Consequently the Department is satisfied that the proposal is generally in the public interest, and should be approved subject to conditions.

8. RECOMMENDATION

It is recommended that the Minister:

- consider this report;
- approve the project subject to conditions; and
- sign the attached instrument.

David Kitto
A/Director, Major Development Assessment

Chris Wilson
Executive Director, Major Project Assessments